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ABSTRACT

The primary effort of the study described is an examination of the effects of college environments on the aspirations, achievements, and attrition rates of disadvantaged students at the end of their freshman year. Subjects were 180 students all of whom were classified as being disadvantaged. The various variables in the study are presented and discussed. This section is followed by results and discussion including the topics: (1) educational aspirations; (2) occupational aspirations; (3) academic aptitude and achievement; (4) self-ratings on academic and personality traits; and (5) life objectives. The next section discusses the effect of college environments on educational outcomes of disadvantaged students. The method of analysis is given along with educational, occupational, and personal outcomes. Some results of the study are: (1) a greater proportion of blacks aspire to postgraduate education than nonblacks; (2) disadvantaged students rate themselves high on drive to achieve and social self-confidence; (3) the best predictors of educational outcomes in this study were early achievements and aspirations; and (4) cohesive and personal school environments have positive effects on most of the educational outcomes. (KJ)

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EDUCATIONAL PROGRESS OF DISADVANTAGED STUDENTS

Helen S. Astin

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Preface

Educational Progress of Disadvantaged Students is a report on a research study to determine the nature of the educational experiences and accomplishments of disadvantaged college and university students, with emphasis on the effect of special programs for these students. The research was conducted at the Bureau of Social Science Research and at University Research Corporation under a contract with the American Council on Education. Funds were made available by a grant from the Office of Economic Opportunity to the American Council on Education. The author wishes to acknowledge the cooperation of the American Council on Education throughout the study. The ACE Office of Research provided the data and performed the tabulations at their computer facilities. I would also like to thank Richard Hofrichter for his assistance during the early stages of this study.

Helen S. Astin

August, 1970

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Educational Progress of Disadvantaged Students

Helen S. Astin

Introduction

Recent years have seen a great increase in efforts to recruit and enroll disadvantaged students in higher education institutions and to offer supportive assistance to them once they are admitted. In some instances, special educational programs have been developed to compensate for the new students' inadequate preparation at the secondary level. In general, most of these efforts are directed at establishing new educational opportunities for disadvantaged youths and making higher education more responsive and relevant to their particular educational needs. In view of these efforts and the general social concern to develop to the fullest all of our human resources, it becomes imperative that we attempt an evaluative examination of how these youths fare once they are admitted to college. Factors that are important in the educational development of disadvantaged students and should be examined include institutional admissions policies, early cultural and environmental experiences of students, their academic aptitude and general academic preparation, and finally their motivational and aspirational characteristics.

Some recent work (Astin, 1969) suggests that we should reconsider our traditional criteria for admission selection. It appears that high school grades or scores on scholastic aptitude tests are not always accurate predictors of educational outcomes.

By revising admissions criteria, we may be able to develop human potential that standardized techniques fail to uncover. Another study, Henderson (1968), indicates that the academic performance of students in the Experiment in Higher Education at the Southern Illinois University demonstrates that "it does not necessarily follow that students who fail entrance exams will also fail in college."

Aside from the traditional admissions policies that tend to penalize the disadvantaged, many institutions are not prepared to educate the disadvantaged. Often, the disadvantaged are offered special assistance but these special efforts and programs are not integrated with the rest of the academic curriculum. Moreover, such programs have been established in only half of the nation's institutions of higher education (Williams, 1969).

Early cultural and environmental experiences of students are also known to have a significant effect upon their educational progress and success in general. Krauss (1964) reports that aspirations for higher education among working-class youth are indeed affected by their perceptions of status discrepancies as well as by their general dissatisfaction with their present status. Perceptions of future opportunities may also be important in influencing aspirations. Fichter (1964), examining career choices among black college graduates, hypothesized that the blacks prefer job areas which they perceive to be most available. Their negative attitudes and lack of confidence regarding technical and realistic job orientations may be due to perceived lack of opportunity in such fields as business or medicine.

To what extent do disadvantaged students feel that they are prepared to perform college work, and how motivated are they to do so? It appears that disadvantaged college students not only feel they are adequately prepared and

that they possess traits conducive to good study habits (Dispenzieri, 1969), but they also score high on personality scales that measure self-worth, self-confidence, and capacity for independent thinking (Ellsworth, 1968).

Thus far, the literature seems to suggest that disadvantaged students entering college have high aspirations, are quite motivated, and are self-accepting. However, our limiting criteria for admissions and our few and poorly integrated special programs for the disadvantaged are rather inadequate to fulfill the need and responsibility for developing all of our human resources.

The study described herein was conducted to find answers to the following questions: What are the educational and occupational aspirations of disadvantaged youth as they are about to begin their college experience? What kinds of strengths do they perceive in themselves? What changes in the above occur after they have been in college for a year? Do they expect to continue their college education? Do they experience success in college? Do they change their educational and occupational plans? What happens to their self-concept?

Our primary effort is an examination of the effects of college environments on the aspirations, achievements, and attrition rates of these students at the end of their freshman year. The intent of this analysis was to allow us to draw some conclusions about the type of college atmospheres and experiences that seem to promote educational progress for disadvantaged students.

Sample and Procedures

The sample for this study was drawn from the American Council on Education (ACE) sample of 36,581 freshmen (1966) at 180 institutions. The original list of 1966 freshmen in the ACE Data Bank file consisted of 250,000 students in 309 institutions that were stratified on the basis of type

(two-year, four-year), size, selectivity, and expenditures (see Bayer, et al, 1969).

The 309 institutions were reduced to 251 by eliminating those which, in the initial and follow-up phase (summer of 1967), had not compiled a complete or representative sampling of their entering freshmen. The list was further reduced to 180 by excluding schools whose registrar failed to submit the required information (freshman GPA, standardized scores, whether the student returned to college for the second year) and schools where a large number of students did not respond to the follow-up questionnaire mailed to them after completion of the freshman year. Several weights were computed -- student and institutional -- to correct biases in the data: (1) Respondent versus nonrespondent bias in the follow-up questionnaire; (2) sampling of students within each institution for the mailed follow-up; and (3) sampling institutions within cells of the population.

In developing our sample, a student was classified as disadvantaged if he met two criteria: (1) Parental income of less than $6,000, and (2) father's education less than high school. Almost eight percent of the freshman college population in 1966 qualified as disadvantaged on the basis of both criteria. Whereas 16 percent of the students in our sample were black, only five percent of the students in a random subsample of 1966 freshmen listed themselves as black.[1] The proportions of male and female students in both samples -- disadvantaged and random -- were 58 and 42 percent, respectively.

Student Variables

The student variables (characteristics) utilized in this study were

[1] As a control group for some of our analyses in this study, we selected a 20 percent random sample from the complete file of 36,581 students.

obtained from Student Information Forms, self-administered questionnaires given to the students by ACE just before they started their freshman year; and from the follow-up questionnaire administered in the summer of 1967. Additional information on these students included in the student variables was obtained from the registrar of the institutions they attended.

The self-administered freshman questionnaire includes items on demographic variables, educational and occupational aspirations, self-ratings, life objectives, and past achievements. The follow-up questionnaire repeats some of the same items to assess changes over time, but also asks the students to report on their experiences during their first year in college (see copies of the two questionnaires in Appendix A).

Institutional Variables

The college variables include information describing the college environment with respect to the kinds of students, administration, and faculty at each institution. The size, type, control, region of the country, and selectivity of the college are also included among the institutional variables. In addition, 33 dimensions on the interpersonal and noninterpersonal behavior of students, the classroom environment, the administrative environment, and the college image were included (see Appendix B for a description of these dimensions).

Statistical Analysis

The analyses utilized in this study include marginal distributions on selected items of information about disadvantaged and random students and cross-tabulations controlling for race and aptitude. However, the major analyses have utilized the step-wise multiple regression model. This method was employed because of our interest in isolating institutional characteristics

that affect educational outcomes, after controlling for the personal characteristics of the students.

Results and Discussion

Educational Aspirations.--Disadvantaged students, as shown in Table 1, tended to have higher aspirations than random students. Disadvantaged black students expressed the greatest aspirations of all groups at the beginning of college as well as after one year of college: 60 percent of black disadvantaged entering freshmen planned to obtain at least the bachelor's degree, compared with 37 percent among the nonblack disadvantaged students, 51 percent among the black random students, and 48 percent among the nonblack random students.

Occupational Aspirations.--Some differences of male disadvantaged and male random students exist in the career plans (see Table 2). Both groups indicated interest in careers in engineering, business, and education. However, after one year of college, interest in business careers increased among random students, but decreased among the disadvantaged. Engineering and medical professions became increasingly attractive to some of the students at the end of the freshman year. This finding is surprising in the light of earlier studies which indicated great losses in both of these fields during the college years (Astin, 1967).

The career plans of women, disadvantaged and random, exhibited similar patterns (see Table 3). Career interests in secondary and elementary education dominated; however, art careers were more appealing to random freshmen women than to the total disadvantaged entering freshman group.

Academic Aptitude and Achievement.--High school grades and SAT scores are often used as admissions criteria because they have been considered valid

TABLE 1

EDUCATIONAL ASPIRATIONS OF DISADVANTAGED
AND RANDOM COLLEGE STUDENTS
(In Percentages)

Highest Academic Degree Planned	Disadvantaged Students				Random Students			
	(Fall 1966)		(Summer 1967)[a]		(Fall 1966)		(Summer 1967)	
	Black	Non-black	Black	Non-black	Black	Non-black	Black	Non-black
None	3.6	6.3	3.5	8.5	2.7	4.4	5.0	3.5
Associate	3.4	6.2	4.8	5.6	3.1	3.8	7.8	6.0
Bachelors	30.3	44.9	24.1	42.7	38.7	44.2	24.8	40.0
Masters	46.4	27.5	48.9	30.9	38.2	31.0	44.6	33.6
Ph.D.-Ed.D.	13.6	9.5	16.0	7.8	13.2	9.0	13.4	9.4
MD. DDS-DVM	1.9	2.5	.9	4.2	1.9	4.5	1.7	4.1
L.L.B.-J.D.	.5	1.3	.6	1.5	.5	1.7	1.4	2.3
B.D.	.2	.1	0.0	.3	0.0	.1	0.0	.1
Other	0.0	1.7	1.2	.6	1.6	1.3	1.8	1.0

[a]The percentages in the Summer of 1967 are based on responses given by the Fall 1966 sample of students after they had completed one year of college.

TABLE 2

CAREER PLANS OF MALE DISADVANTAGED AND RANDOM COLLEGE STUDENTS
(In Percentages)

Career Plans	Disadvantaged Students		Random Students	
	(Fall 1966)	(Summer 1967)	(Fall 1966)	(Summer 1967)
Arts	2.3	3.0	3.9	3.7
Business	18.6	17.6	15.1	16.2
Clergy	1.1	1.5	1.0	1.4
College Teaching	2.2	2.9	2.5	1.7
Medical Professions (MD. DDS)	3.9	4.0	5.9	7.1
Secondary Teaching	14.7	13.9	11.8	10.2
Elementary Teaching	.9	.5	.9	.6
Engineering	17.5	18.6	15.8	19.1
Farming	5.2	3.6	2.4	3.1
Health Professions	1.6	3.1	2.5	3.4
Law	3.1	3.0	5.1	5.0
Nursing	0.0	0.0	.2	0.0
Research	3.8	4.2	5.0	6.4
Other	18.4	20.0	17.6	16.9
Undecided	6.5	4.0	10.1	5.3

TABLE 3

CAREER PLANS OF FEMALE DISADVANTAGED AND RANDOM COLLEGE STUDENTS
(In Percentages)

Career Plans	Disadvantaged Students		Random Students	
	(Fall 1966)	(Summer 1967)	(Fall 1966)	(Summer 1967)
Arts	3.7	5.5	9.1	10.0
Business	4.5	4.5	4.6	2.9
Clergy	1.5	2.0	.5	2.4
College Teaching	2.1	.9	1.8	1.8
Medican Professions (MD., DDS)	1.2	1.1	.9	1.2
Secondary Teaching	20.7	19.1	18.5	18.8
Elementary Teaching	18.0	19.9	17.8	16.0
Engineering	.6	.3	.4	.2
Farming	.5	0.0	.1	.1
Health Professions	8.5	8.9	7.6	9.2
Law	1.4	1.3	.8	.5
Nursing	4.7	4.9	3.9	4.9
Research	1.0	2.6	1.7	.9
Other	23.4	25.9	23.8	27.0
Undecided	8.1	3.1	8.4	4.2

predictors of future academic success. Although we found that disadvantaged students in the sample received somewhat better grades in high school than the random students, their SAT scores were generally lower, and even more so for the black disadvantaged (Tables 4 and 5). Whereas high school grades which measure performance vary from school to school, SAT scores are standardized and based upon national norms. The lower achievement of blacks on standardized tests can be attributed to a bias of these tests that favors students from middle-class backgrounds.

Although the disadvantaged students scored lower than the random sample on SAT's, their grades in college were better than would have been predicted on the basis of their aptitude scores. Comparing the GPA levels (Table 6) attained by the sample students during their freshman year in college, we find that the nonblack disadvantaged students attained the highest averages of all groups. A little over one-fourth received a GPA of 2.50 (B-) or better, and fewer of them fell below 1.80. Moreover, the black disadvantaged group had a higher GPA index than the black random students.

Similar disparities between SAT's and attrition rates are also apparent when attrition rates are compared with SAT scores. Among nonblacks with low SAT scores, the return rate was almost twice as high for disadvantaged students as it was for random students. The proportions of disadvantaged black students with low scores who returned for a second year was also higher than that observed among random black students (see Table 7).

However, blacks in both groups had a higher dropout rate than nonblacks: 28 and 27 percent, compared with 18 percent among nonblack disadvantaged and random students.

Self-ratings on academic and personality traits.--The ability to succeed

TABLE 4

HIGH SCHOOL GRADES OF DISADVANTAGED AND RANDOM COLLEGE STUDENTS
(In Percentages)

	Disadvantaged Students	Random Students
Less than B	43.8	45.1
B or Better	56.2	54.8

TABLE 5

SAT SCORES OF BLACK AND NONBLACK DISADVANTAGED AND RANDOM COLLEGE STUDENTS
(In Percentages)

SAT Scores	Disadvantaged Students		Random Students	
	Black	Nonblack	Blacks	Nonblack
Less than 500	4.0	.1	3.7	0.0
500-650	38.7	4.5	30.0	2.9
651-800	37.4	18.7	39.2	11.6
801-950	14.4	26.0	16.0	23.0
951-1100	4.6	29.8	5.9	33.1
1101-1250	.8	13.4	4.8	18.7
1251-1400	.2	6.9	.4	8.8
1401-1550	0.0	.6	0.0	1.8
1551 plus	0.0	0.0	0.0	0.0

TABLE 6

FRESHMEN GPA's OF BLACK AND NONBLACK DISADVANTAGED AND RANDOM COLLEGE STUDENTS
(In Percentages)

Freshman GPA	Disadvantaged Students		Random Students	
	Black	Nonblack	Black	Nonblack
Less than 1.50	13.9	11.6	23.7	11.5
1.50-1.79	19.0	8.1	14.9	18.1
1.80-1.99	10.9	9.0	11.1	9.6
2.00-2.49	34.1	32.1	32.2	30.8
2.50-2.79	11.4	14.0	12.5	15.9
2.80-2.99	4.6	7.8	2.9	7.1
3.00-3.49	5.5	11.8	2.4	11.1
3.50-3.79	.7	5.6	.2	3.9
3.80-3.99	0.0	0.0	0.0	0.0

TABLE 7

DISTRIBUTION OF STUDENTS RETURNING FOR A SECOND YEAR OF COLLEGE BY SAT SCORES
(In Percentages)

SAT Scores	Disadvantaged Students		Random Students	
	Black	Nonblack	Black	Nonblack
Less than 500	1.9	.1	2.3	0.0
500-650	37.4	3.3	27.9	2.4
651-800	38.1	19.2	42.5	10.5
801-950	17.3	25.4	17.4	21.0
951-1100	4.0	29.3	4.7	33.7
1101-1250	1.1	15.1	4.8	20.6
1251-1400	.2	7.0	.5	9.7
1401-1550	0.0	.5	0.0	2.0
1551 plus	0.0	0.0	0.0	0.0

in college depends upon personality variables as well as academic skills and aptitudes. How do disadvantaged students differ from random students in "self-concept" and in traits that are associated with educational outcomes? Table 8 indicates that freshmen random students (black and nonblack combined) scored higher on a number of self-ratings than disadvantaged students. After one year of college, however, the random students rated themselves lower on "drive to achieve," whereas the disadvantaged students indicated a slight increase on this trait (see Table 9). When we controlled for race (Table 8), the black disadvantaged and black random students scored higher than nonblacks on "drive to achieve," "social self-confidence," and "understanding of others." On the other hand, nonblacks, whether disadvantaged or random, scored higher than blacks on "leadership ability," "intellectual self-confidence," and "sensitivity to criticism." It appears that the black students' self-concept -- whether disadvantaged or random -- is quite positive. Although they have somewhat more doubts about their intellectual skills, they score high on "drive to achieve" and feel adequate socially.

Life objectives.--An individual's "life objectives," or value orientations, play an important role not only with respect to a choice of a career but, more importantly, in influencing educational progress and general educational aspirations and motivation. Both disadvantaged and random students considered the following life objectives as very important or essential: to be "an authority in one's field," to "help others," and to be "politically up-to-date." Fewer attributed importance to achievement in the arts as a life objective (see Table 10).

At the end of one year in college there are some changes in the proportions of students that consider some of these life objectives essential or

TABLE 8

SELF-RATINGS OF BLACK AND NONBLACK DISADVANTAGED FRESHMEN COLLEGE STUDENTS
(In Percentages)

Self Ratings	Disadvantaged Students						Random Students					
	Black			Nonblack			Black			Nonblack		
	BA	AV	AA	BA	AV	AA	BA	AV	AA	BA	AV	AA
Acadenic ability	5.6	48.3	46.1	3.0	46.5	50.4	1.4	49.5	49.1	2.3	35.2	62.5
Drive to achieve	.5	34.4	65.1	4.3	42.8	53.0	0.0	33.4	66.6	3.8	37.5	58.8
Leadership ability	11.6	62.5	25.9	18.0	51.4	30.6	7.7	60.2	32.1	13.6	47.8	38.6
Intellectual self confidence	4.9	68.2	26.8	14.4	56.8	29.0	5.4	67.2	27.5	9.3	54.7	35.9
Socia' self confidence	10.5	64.1	25.4	22.7	58.4	18.8	10.5	55.6	33.9	18.7	54.4	26.9
Sensitivity to criticism	7.2	68.1	24.7	13.6	57.5	28.9	15.1	69.5	14.0	15.4	59.0	25.5
Stubbcrness	19.3	62.1	18.6	12.4	56.4	32.3	17.1	56.8	26.1	14.4	49.7	35.9
Understanding of others	0.0	30.7	69.2	1.9	43.4	54.7	0.0	24.0	65.9	1.4	35.8	62.8

BA=Below average
AV=Average
AA=Above average

TABLE 9

SELF-RATINGS OF DISADVANTAGED AND RANDOM STUDENTS IN THE FALL OF 1966
AND IN SUMMER OF 1967
(In Percentages)

Self Ratings	Disadvantaged Students						Random Students					
	(Fall 1966)			(Summer 1967)			(Fall 1966)			(Summer 1967)		
	BA	AV	AA	BA	AV	AA	BA	AV	AA	BA	AV	AA
Academic ability	4.3	46.9	49.7	6.4	44.9	48.8	2.3	35.9	61.9	4.4	38.2	57.3
Drive to achieve	3.6	41.3	55.1	5.7	38.4	55.9	3.6	37.3	59.0	7.2	39.4	53.5
Leadership ability	16.9	53.4	29.8	16.6	51.4	32.0	13.3	48.4	38.3	14.7	45.2	40.1
Intellectual self confidence	12.6	58.8	28.6	13.1	52.7	33.2	9.2	55.3	35.5	12.4	46.8	40.7
Social self confidence	20.6	59.4	20.0	26.0	49.0	24.9	18.3	54.5	27.3	21.0	47.1	31.9
Understanding of others	1.6	41.2	57.2	1.9	37.2	60.9	1.3	35.3	63.4	1.7	31.4	66.9

BA= Below average
AV= Average
AA= Above average

TABLE 10

LIFE OBJECTIVES CONSIDERED TO BE ESSENTIAL OR VERY IMPORTANT
(In Percentages)

Objectives	Disadvantaged Students		Random Students	
	(Fall 1966)	(Summer 1967)	(Fall 1966)	(Summer 1967)
Accomplished in arts	8.1	8.9	10.5	10.4
An authority in my field	69.8	72.2	66.0	68.5
Recognition from others	45.1	46.2	44.5	42.3
Accomplished performer	5.8	4.8	6.9	7.3
Expert in finance	15.3	15.5	12.8	13.4
Administrative responsibility	26.6	29.8	30.5	27.6
Well off financially	39.9	43.4	41.8	42.4
Helping others	71.7	70.6	68.3	67.3
Peace Corps or Vista	19.1	16.7	19.0	16.4
Outstanding athlete	14.5	9.3	12.4	10.8
Community leader	26.9	25.2	26.0	22.7
Contribution to science	15.4	15.6	14.2	12.1
Original writing	10.8	12.1	12.7	14.0
Never being obligated	30.0	33.3	27.8	31.0
Create artistic work	10.8	12.6	12.9	16.7
Politically up to date	56.0	52.6	58.5	59.3
Successful in business	50.6	50.2	50.4	43.2

or very important. More disadvantaged students rated "recognition from others" as an important life objective than did random students, and becoming "well off financially" was rated important by more students in both groups after a year in college. However, becoming an "outstanding athlete" dropped off with both groups. Whereas slightly more of the disadvantaged students aspired to greater "administrative responsibility" later in life after having been in college a year, this trend was reversed for random students. It appears that the disadvantaged students value themselves more and increase their life aspirations as they complete one year of their college work. The college experience by no means can be considered a traumatic or negative experience to their self-concepts or general aspirations and motivation.

Choice of institution.--The type of institution attended by this sample of students appears to be more a function of race than of disadvantaged status. Among nonblacks, fewer disadvantaged students are enrolled at universities, but the overwhelming majority of blacks in both the random and disadvantaged categories attend liberal arts colleges (Table 11). Interestingly, close to three times as many nonblack as black disadvantaged students in the sample attended junior colleges. However, among random students -- both black and nonblack -- the proportions that attended junior colleges were about equal. More nonblack than black students, whether disadvantaged or random, attended universities.

The differences in the proportions of blacks and nonblacks in the different types of institutions depend on a number of factors. Some blacks prefer predominantly Negro institutions which are, for the most part, liberal arts institutions. Furthermore, the low proportions of blacks in junior colleges may be the result of their higher educational and occupational aspirations.

TABLE 11

TYPE OF INSTITUTIONS
(In Percentages)

Type of Institution	Disadvantaged Students		Random Students	
	Black	Nonblack	Black	Nonblack
University	5.1	19.9	6.3	31.5
Liberal arts	79.2	29.2	68.0	28.7
Teachers	2.0	9.4	1.2	8.6
Combination	.2	6.8	3.1	6.5
Junior	13.5	34.6	21.3	24.7

With respect to institutional control, most students across all categories attend state controlled institutions, but this tendency is especially pronounced among both groups of blacks (see Table 12).

Effect of College Environments on Educational Outcomes of Disadvantaged Students

One of our major interests in this study was the isolation of college characteristics that differentially affect educational outcomes among disadvantaged students. We examined ten educational outcomes. Three of these concerned educational status, achievement, and aspirations: Return to college for a second year; grade point average at the end of the freshman year; and plans to attain at least the bachelor's degree. The second set of outcomes included selected career plans at the end of the freshman year. Only three types of career plans were examined (medicine, secondary school teaching, and engineering). These three were selected because they differ with respect to required training and types of persons attracted to them. The third set of outcomes included four self-ratings on personality attributes: "drive to achieve," "leadership," "social self-confidence," and "understanding of others."

The 79 personal variables employed included demographic characteristics, early achievements and activities, early major and career plans, self-ratings, and expressed life objectives at the beginning of college. The environmental measures included 43 variables descriptive of the college environment. These were measures of the type, control, size, location, and selectivity of the college. In addition, 33 environmental dimensions were included (see Appendix C for a listing of all personal and environmental variables).

Method of Analysis

The statistical method used to analyze the effects of the different

TABLE 12

CONTROL OF INSTITUTIONS
(In Percentages)

Type of Control	Disadvantaged Students		Random Students	
	Black	Nonblack	Black	Nonblack
Federal	0.0	0.5	0.0	0.7
State	61.6	40.5	54.3	42.6
Local	14.7	27.0	21.7	21.9
Catholic	1.2	6.0	1.5	7.2
Denominational	15.7	9.3	10.4	10.9
Nondenominational	6.7	16.7	12.1	16.7

variables on various educational outcomes was step-wise multiple regression. Performing the regression analysis in step-wise fashion permits one to control the effects of each independent variable in a predetermined sequence. Thus, the personal variables were entered first in order to examine the relationship between the different environmental variables and the educational outcome. All of the regression analyses were based on an N of 1,364 cases.

Educational Outcomes

We examined three types of educational outcomes after the disadvantaged students had completed one year of college: (1) Return to college for a second year; (2) grade point average achieved during the college freshman year; and (3) expressed plans to attain at least the bachelor's degree.

Return to college for a second year.--The examination of factors predicting returning for a second year versus dropping out suggests some difficulties on the basis of the personal variables utilized in this study. The multiple correlation (R) obtained was .26. Only seven variables entered the regression equation with significant weights: high school grades; played a musical instrument while in high school; plans for a career in secondary school teaching; and father's education (see Table 13). However, if the student was a girl, older, or rated himself/herself high in understanding of others, the student was less likely to return to college for a second year. Academic achievement in the past as reflected in high school grades and high Socio Economic Status (SES) are positive predictors of the student's return for a second year of college.[2] On the other hand, women and older students

[2]Although all of the students in the sample had to have fathers whose education was less than high school, there was still some variability in the sample; i.e., those whose fathers had only grammar school education or less and those whose fathers had less than high school but more than grammar school education.

TABLE 13

PERSONAL AND ENVIRONMENTAL VARIABLES ASSOCIATED WITH "RETURN TO COLLEGE FOR A SECOND YEAR" (R=.26)

Variables	F-ratio
Personal	
High school grades	26.08
Sex (female)	-20.93
Age	- 8.42
Career in secondary education	7.62
Father's education	6.40
Understanding of others	- 5.07
Played musical instrument	4.46
Environmental	
"Regularity of sleeping habits"	11.29
Institution in Northeast	6.59

NOTE: The F-ratios associated with the personal variables illustrate the unique or independent contribution of each variable to the reduction of the residual sum of squares in the final solution.

The F-ratios associated with the environmental variables represent the significance levels of the partial correlations of the environmental variables with the criterion after the control of the personal variables.

Items in quotes refer to ICA Dimensions.

are more likely to drop out. Whereas a career in secondary education is predictive of less attrition among students, high self-rating in "understanding of others" is a negative predictor.

The only two environmental variables that yielded significant positive partial correlations with the criterion after control of the personal variables were: regularity of sleeping habits and whether the institution was located in the Northeast. Institutions that scored high on the dimension of regularity of sleeping habits tended to have students who frequently go to church and who commute. Institutions with low scores on this factor tended to have students who live away from home. This relationship suggests that students who go to these kinds of colleges are less likely to return to that college for a second year.

Freshman grade point average.--The use of the 79 personal variables in the prediction of freshmen GPA yielded a multiple R of .55. The variables in order of significance in the prediction of GPA were: high school grades; aptitude (SAT) scores; age; high self-rating on academic ability; drive to achieve; sex (female); probable major field choice in the biological sciences; and having attended recitals during the senior year in high school. The negative predictors were: concern about financing own education; feeling lost during the first year of college; low social self-confidence; low aspirations; plans to pursue a career in one of the health professions or in engineering; and father's education (Table 14).

It is evident from the analysis that disadvantaged women students with high grades and high aptitude (SAT) scores achieve a higher GPA as freshmen than men do. On the other hand, students who plan careers in the health professions and in engineering, who have low general aspirations, who worry about

TABLE 14

PERSONAL AND ENVIRONMENTAL VARIABLES ASSOCIATED WITH "FRESHMAN GPA" (R=.55)

Variables	F-ratio
Personal	
High school grades	103.41
Aptitude (SAT scores)	59.94
Age	20.87
Academic ability (self-rating)	10.29
Social self-confidence	- 11.69
Felt "lost"	- 8.04
Drive to achieve	6.20
Attended recital	6.17
Career in health professions	- 5.66
Career in engineering	- 5.66
Aspirations	- 5.63
Concern about finances	- 4.28
Major in Bio Sciences	4.07
Father's education	- 4.06
Sex (female)	3.87
Environmental	
Selectivity of the institution	- 77.64
University	- 19.33
Size	- 12.39
Two-year institution	10.43
Institution in Northeast	- 31.41
"Involvement in class"	38.22
"Academic competitiveness"	- 26.70
"Organized dating"	- 21.47
"Musical and artistic activity"	17.49
"Drinking/religiousness"	- 17.28
"Conflict with regulations"	16.44
"Severe policy against drinking"	15.29
"Flexibility of curriculum"	14.10
"Concern for individual"	13.67

NOTE: (see Table 13)

financing their education, and who claim to have felt lost while in college, tend to receive lower GPA's.

After the control of the personal variables, a rather large number (14) of environmental variables carried significant partial correlations with the criterion. Thus, we decided to run another analysis in which we first forced into the regression all personal variables that carried significant weights and then allowed the environmental variables to enter free (Table 14A).

The analysis showed that high school grades and overall scholastic aptitude (SAT) scores are still the best predictors of freshman GPA. Disadvantaged students who plan to major in the biological sciences receive higher grades than students of other majors. Those who plan to pursue a health professions career usually receive lower grades. Concern about finances or feeling lost in college are predictive of lower grades. Moreover, students who rate themselves high on academic ability and drive to achieve usually receive higher grades. Looking at the environmental variables, we find that students who attend institutions that score high in selectivity tend to get lower GPA's. However, disadvantaged students at private institutions obtain better grades than disadvantaged students at public institutions; disadvantaged students at universities, especially those located in the Northeast and Southeast, tend to get lower grades. Also, disadvantaged students in institutions where a higher proportion of the student body works for pay usually receive lower GPA's.

In brief, it appears that although overall aptitude and past performance are still the best predictors of academic achievement, there are also some elements in the institutional environment that hinder academic success; that is, in universities and, in general, selective institutions, disadvantaged students' academic performance (as measured by grades) is lower when these

TABLE 14A

PERSONAL AND ENVIRONMENTAL VARIABLES ASSOCIATED WITH FRESHMAN GPA
(R=.61)

Variables	F-ratio
Personal	
High school grades	141.19
Aptitude (SAT scores)	123.95
Social self-confidence	- 17.16
Age	13.43
Career in Health Professions	- 6.69
Academic ability (self-rating)	6.21
Drive to achieve	5.81
Concern about finances	- 5.07
Felt "lost"	- 4.68
Major in bio-sciences	4.09
Environmental	
Selectivity of the institution	- 55.96
Control of the institution (private = 2)	19.33
"Use of automobiles"	13.39
"School spirit"	12.68
School in Northeast	- 12.31
School in Southeast	- 10.86
University	- 9.02
"Student employment"	- 6.25
"Severe policy against cheating"	- 5.74

NOTE: The F-ratios associated with the personal and environmental variables illustrate the unique or independent contribution of each variable to the reduction of the residual sum of squares in the final solution.

students worry about finances and when they have to work during the school year.

Aspirations for a bachelor or higher degree.--The next educational outcome examined was the education plans of students with respect to academic degrees. The analysis called for an examination of the personal characteristics of students and of the environmental variables that predict whether a student plans to obtain at least the bachelor's degree. Table 15 lists all of the personal and environmental variables that significantly predicted the students' educational aspirations.

The analysis showed that students who had high degree-aspirations (post-graduate degrees) before college were more likely to have the same aspirations a year later. Disadvantaged students who planned careers in business and who also aspired to be successful in their own business, were more likely to aspire to obtain at least a bachelor's degree than all others. On the other hand, artistic achievements (wrote a poem, award in art competition) were less predictive of high aspirations. This finding suggests that students who have artistic talent and who have experienced artistic success do not consider the receipt of the BA degree an important requirement to their career plans and aspirations. More students from larger families plan to obtain the bachelor's degree than students from smaller families. This suggests that disadvantaged students from larger families may not take for granted their being in college; thus, completing the BA is an important and essential accomplishment.

Students who attend a two-year institution are less likely to aspire to obtain at least the BA degree. Also, if the institution a student attends is in the West, he is less likely to aspire to obtain the BA degree. Students who attend institutions that are described as having cohesive student bodies,

TABLE 15

PERSONAL AND ENVIRONMENTAL VARIABLES ASSOCIATED WITH PLANS TO COMPLETE THE "BACHELOR'S DEGREE" (R=.48)

Variables	F-ratio
Personal	
Early aspirations	94.90
Major in business	-41.32
Number of siblings	15.51
Career in business	14.07
Attended public high school	9.78
Aptitude (SAT scores)	7.63
Wrote a poem	- 7.27
Succeed in business	6.45
Award in art competition	- 5.45
Major in pre-professional	- 4.13
Environmental	
Two-year institution	-43.17
"Emphasis on social life"	11.03
"Informal dating"	10.98
"Cohesiveness"	9.50
"Severity of policy against cheating"	- 7.97
"Regularity of sleeping habits"	7.06
Institution in the West	- 4.24

NOTE: (see Table 14A)

where students engage in informal dating and an active social life, are more likely to aspire to eventually obtain a BA degree or more after they have completed one year of college. Since the student's grades can affect his future educational plans and degree aspirations, we re-ran these analyses, controlling for the student's freshman GPA. Freshman GPA entered the equation significantly in the prediction of degree aspirations ($F = 15.33$). After control of all significant personal variables, institutions in which there is a permissive atmosphere and where the grading policies are less severe are more likely to have a positive affect on degree aspirations.

In summary, it appears that a student's career aspirations and work needs are very predictive of his degree aspirations. A business orientation is highly predictive of plans to complete college, whereas students with artistic orientations do not consider the BA an important requirement for their occupational plans. Also, the cohesive college environments are more likely to encourage students to plan to complete their college education. Interestingly, some of these relationships persist and remain predictive after four years of college. Astin and Panos (1969) reported that factors such as cohesiveness and regularity of sleeping habits are predictive of educational attainment, whereas institutional location (West and Southwest) is a negative predictor of such outcomes.

Occupational Outcomes

For the analyses of occupational outcomes we examined only the factors that influence students with career plans in medicine, secondary school teaching, and engineering. We selected these three careers because of their dissimilarity in required training and future job tasks. Tables 16, 17, and 18 list the personal and environmental variables that were predictive of the

three career outcomes.

Medicine and Dentistry.--Students who were planning medical careers as they were about to begin college were the most likely of the three career groups to have similar career aspirations at the end of their freshman year (see Table 16). Among the personal variables, the student's grades in high school and whether he used the library to study while in high school were positive predictors of aspiring to become a doctor or a dentist. In a sense, the students who performed well academically and who were serious about studying were more likely to plan for medical careers. A "permissive" college environment tends to encourage students with career plans in medicine and dentistry. Permissive environments are perceived by students as those with an intellectual atmosphere that is considered theoretical rather than practical. Moreover, students in institutions which in addition to being permissive, are also described as allowing the students greater leisure time and social activities, are more likely to maintain their medical career aspiration.

Secondary Education.--Students with career expectations in either elementary or secondary education prior to entering are, at the end of freshman year, more likely to plan careers in secondary teaching. Planning to major in the humanities or English was predictive of secondary education career plans (Table 17); also, girls were more likely to plan such careers than were boys. Individuals aspiring to secondary education careers tended to indicate that an important life objective for them was recognition by their colleagues. A puzzling negative relationship was observed between a choice in secondary education and a high self-rating on "understanding of others." However, when we examine the zero order correlations between this

TABLE 16

PERSONAL AND ENVIRONMENTAL VARIABLES ASSOCIATED WITH CAREER PLANS IN "MEDICINE AND DENTISTRY" (R=.79)

Variables	F-ratio
Personal	
Early career in medicine or dentistry	992.25
Early career in health professions	23.54
Major in preprofessional	11.01
Major in nursing	- 11.93
High school grades	5.22
Studied in library	3.40
Wrote article	- 7.65
Environmental	
"Permissiveness"	5.69
"Leisure time"	4.30
"Concern for individual student"	- 4.34
"Cohesiveness"	- 4.28
"Emphasis on social life"	4.01

NOTE: (see Table 13)

TABLE 17

PERSONAL AND ENVIRONMENTAL VARIABLES ASSOCIATED WITH CAREER PLANS IN "SECONDARY EDUCATION"
(R=.58)

Variables	F-ratio
Personal	
Early career in secondary education	503.01
Major in humanities	15.19
Letter in athletics	9.10
Obtain recognition from colleagues	9.89
Studied in library	- 7.74
Understanding of others	- 8.00
Major in English	4.93
Career in elementary education	6.29
Sex (female)	4.84
Environmental	
"Involvement in class"	8.62
"Independence"	- 7.61
"Drinking/religiousness"	- 6.62
"Severity of grading"	- 4.18
"Career indecision"	- 4.85
"Extroversion of instructor"	5.64
"Academic competitiveness"	- 4.41

NOTE: (see Table 13)

variable (understanding of others) and other self-ratings and life goals, we observe that usually individuals who rate themselves high on "drive to achieve," on "academic ability," on "intellectual self confidence" and have also higher educational and career aspirations tend to score lower on understanding of others.

In brief, they are self-confident people with high aspirations and status needs. These traits are seldom shown as characteristics of individuals who plan to be high school teachers.

After control of the personal variables, the environmental variables that related significantly to the criterion of secondary education were (1) colleges that were not academically competitive, (2) colleges where students felt very involved in their classrooms, and (3) colleges where the instructors were perceived to be extroverted individuals. These institutions were also characterized as religious and not very encouraging of students' independence.

Engineering.--Majoring in engineering or math and planning a career in engineering prior to college entrance are the two best predictors of choice of engineering as a future occupation (Table 18). The types of institutions that encourage the disadvantaged students to pursue careers in engineering tend to be academically more competitive, private, and two-year institutions. The institutions are also characterized by lack of school spirit and leisure time. They are the less permissive institutions, attended mostly by students who know pretty well what careers they want to pursue (see "career indecision, Table 18). Disadvantaged students in these institutions engage infrequently in musical and artistic activities, and they do not use the library facilities as much as or as often as disadvantaged students in

TABLE 18

PERSONAL AND ENVIRONMENTAL VARIABLES ASSOCIATED WITH CAREER PLANS IN "ENGINEERING" (R=.80)

Variables	F-ratio
Personal	
Early career in engineering	123.35
Major in engineering	64.43
Major in math	12.69
Mathematical ability (self-rating)	6.23
Environmental	
"Academic competitiveness"	13.47
"Leisure time"	- 9.68
"Career indecision"	- 7.42
2-year institution	7.28
Private institution	6.48
"School spirit"	- 5.80
"Musical and artistic activity"	- 5.77
"Use of library"	- 5.50
"Permissiveness"	- 5.29

NOTE: (see Table 14A)

other institutions.

In summary, the best predictors of the four career outcomes we examined at the end of freshman year are the career plans expressed prior to college. Choices of certain majors during the freshman year are also predictive of career outcomes. Career choices in secondary education are usually made by persons who show low status needs and aspirations and who rate themselves low on understanding of others. Less permissive environments affect choices in engineering careers, whereas the more personalized classroom experiences influence choices in secondary education. Environments which offer a great deal of social life and leisure time are influential in the disadvantaged students' decisions to continue with plans for a medical career.

Personal Outcomes

The students in our sample were asked to rate themselves on a number of personality dimensions prior to college and at the end of the freshman year, so we were able to determine the early correlates of personal growth and to examine the college environments that relate to this growth.

For the examination of personal growth, we selected four self-ratings: "drive to achieve," "leadership," "social self-confidence," and "understanding of others." We were interested in determining the kinds of personal characteristics that predict high ratings on these traits at the end of the freshman year, and in examining the environmental characteristics that relate significantly to these self-ratings, after we controlled for the effect of the personal variables.

Very often studies of college students do not consider or examine changes in students' self-concept of self-esteem that result from the college experience--such data are collected because they relate to educational and occupational

outcomes, but are seldom analyzed.

Drive to Achieve.--The best predictor of a high self-rating of "drive to achieve at the end of freshman year is the self-rating of drive to achieve during the early (fall) assessment (see Table 19). However, there are a number of other variables that predict growth in the drive to achieve at the end of freshman year. If a person reported high grades in high school, rated himself high on leadership and intellectual self-confidence, had won in a state musical competition, and considers it important to contribute to scientific theory in the fall, he is more likely to rate himself high on drive to achieve at the end of the freshman year. Oriental students rated themselves more highly on this trait than students of other races. Whereas past artistic achievements (poetry and art) were negative predictors of a high self-rating on drive to achieve, musical achievements carried a positive weight. The differential predictive value of the different artistic achievements was observed also in the prediction of educational outcomes, and, in particular, of plans to obtain at least the bachelor's degree.

Parental income negatively predicts drive to achieve. That is, students from the higher SES families within this group of disadvantaged[3] were less likely, than were the students from the lower SES backgrounds, to rate themselves high on drive to achieve. It is also interesting to note that early plans for a career in secondary education, as opposed to plans for other careers, are predictive of a high rating on drive to achieve. One wonders whether this relationship is indeed significant with all students or unique to students from disadvantaged backgrounds. The highest positive relationships,

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[3]Although all of the students indicated parental income of less than $6,000 within the disadvantaged group, there was a proportion whose parental income was less than $4,000.

TABLE 19

PERSONAL AND ENVIRONMENTAL VARIABLES ASSOCIATED WITH "DRIVE TO ACHIEVE" AT THE END OF FRESHMAN YEAR (R=.52)

Variables	F-ratio
Personal	
Early drive to achieve	180.70
Leadership	24.63
High school grades	17.35
Contribute to scientific theory	11.41
Oriental (race)	10.04
Age	8.02
Parental income	- 5.24
Wrote a poem	- 4.63
Award in art competition	- 4.35
High rating in state music contest	4.33
Career in secondary education	5.51
Intellectual self-confidence	4.99
Environmental	
Size	3.83
Southeast	- 3.50

NOTE: The F-ratios associated with the personal variables illustrate the unique or independent contribution of each variable to the reduction of the residual sum of squares in the final solution.

The F-ratios associated with the environmental variables represent the significance levels of the partial correlations of the environmental variables with the criterion after the control of the personal variables.

although nonsignificant, between drive to achieve and career plans were: doctor, researcher, lawyer, and secondary school educator. There was a negative relationship with farm career plans, and no relationship with college professor. These trends suggest that the positive relationship between secondary education career plans and the drive to achieve may be unique to this group, especially in view of the lack of such a relationship between drive to achieve and plans for a career in college teaching among the disadvantaged students.

Only two environmental or college variables carried significant partial correlations with the criterion of drive to achieve, after the control of the personal variables--the size of the institution and its location. The larger institutions were more likely to influence students in the directions of a higher achievement drive. On the other hand, institutions located in the Southeast had the opposite effect regardless of size.

Leadership.--"Leadership ability" was one of the traits for which students were asked to rate themselves before and after the freshman year of college. Table 20 presents the significant personal and environmental variables in the prediction of a high self-rating in leadership ability. After we account for the self-rating in this trait prior to college, we note that students who feel self-confident in general are more likely to rate themselves high on leadership.

The analysis shows that girls, probable majors in physical science and math, and students who rate themselves high on intellectual self-confidence are less likely to rate themselves high on leadership. On the other hand, aptitude, high aspirations, a high rating on academic ability, and drive to achieve are positive predictors of leadership.

TABLE 20

PERSONAL AND ENVIRONMENTAL VARIABLES ASSOCIATED WITH SELF-RATING ON "LEADERSHIP" (R=.65)

Variables	F-ratio
Personal	
Early leadership	382.70
Social self-confidence	25.37
Sex	- 12.79
Major in physical science	- 9.55
Career in secondary education	7.11
NSF summer program	7.23
Award in art competition	- 8.31
Studied in library	- 6.65
Academic ability	6.10
Drive to achieve	6.06
Understanding of others	5.06
Aptitude	5.27
Aspirations	4.38
Wrote a poem	- 4.23
Elected president of student organization	3.87
Took major part in play	4.58
Gambled	- 5.71
Intellectual self-confidence	- 5.04
Major in math	- 4.78
Environmental	
"Musical and artistic activities"	- 4.15
"Severity against cheating"	- 3.73
"School spirit"	- 3.55

NOTE: (see Table 19)

After control of the significant personal characteristics in predicting a high self-rating on leadership, we observed that certain environmental characteristics are important in facilitating or encouraging leadership. Institutions with low school spirit, with severe administrative policies against cheating, and with fewer students participating in musical and artistic activities are more likely to encourage students in exhibiting or in developing leadership characteristics. Institutions in which students engage less often in musical and artistic activities are also characterized by a competitive atmosphere. Moreover, the environment in these institutions is seen as less friendly than that in the institutions where there is more musical and artistic activity. Also, the institutions with low school spirit are often the commuter colleges. Thus, it appears that in college environments characterized by the above, students are more likely to exhibit leadership qualities. Perhaps in these environments there is a greater need for definition of roles with respect to leadership.

Social Self-Confidence.--High ratings on social self-confidence at the end of freshman year were predicted by certain early characteristics (see Table 21). For example, the student's aptitude measured by the SAT negatively predicts social self-confidence. That is, the more academically able students are less likely to rate themselves high on social self-confidence. On the other hand, students who rated themselves high on leadership and on understanding of others, and who had had a major part in a play, were more likely to rate themselves high on social self-confidence. After the control of the personal variables, the three college variables that related significantly to a high rating on social self-confidence were emphasis on athletics, privately controlled institutions, and student employment. That is, students who attend

TABLE 21

PERSONAL AND ENVIRONMENTAL VARIABLES ASSOCIATED WITH "SOCIAL SELF-CONFIDENCE" (R=.53)

Variables	F-ratio
Personal	
Early social self-confidence	282.83
Leadership	12.48
Felt "lost"	- 10.95
Aptitude (SAT scores)	- 12.17
Had major part in play	7.67
Major in math	- 6.71
Understanding of others	3.99
Environmental	
"Emphasis on athletics"	- 4.75
Control (private=2)	5.17
"Student employment"	3.94

NOTE: (see Table 19)

institutions in which there is a great deal of emphasis on athletics are likely to rate themselves as less self-confident over time. If the institutional mode is that students work for pay during the school year, they are more likely to become socially self-confident overtime. Moreover, private institutions, regardless of athletic emphasis or student employment, seem to have a positive effect on the enhancement of self-confidence.

Achievement in athletics requires certain specialized skills. Therefore, in an environment in which athletic success is rewarded, students who lack these skills or have not had previous athletic training could find this experience damaging to their self-esteem. On the other hand, it is interesting to note that a work experience while in college can enhance a student's self-confidence.

Understanding of others.--A high self-rating on ability to understand others is predictable from a high self-rating on social self-confidence and leadership (see Table 22). It is also predictable from life goals such as helping others who are in difficulty. Those who come from the higher SES backgrounds, even within the disadvantaged category (see footnotes 3 and 4), are more likely to rate themselves higher on this trait. The two ability and interest measures that negatively predicted this trait were mathematical ability and plans to major in agriculture.

Institutions in the Northeast are shown to have a positive impact on this trait. Also, the more avant garde campuses in which most of the students came from high socioeconomic backgrounds tend to influence positively the disadvantaged students' self-ratings on ability to understand others.

TABLE 22

PERSONAL AND ENVIRONMENTAL VARIABLES ASSOCIATED WITH SELF-RATING ON "UNDERSTANDING OF OTHERS" (R=.53)

Variables	F-ratio
Personal	
Early understanding	310.50
Math ability	- 13.52
Help others	20.56
Father's education	5.66
Social self-confidence	5.44
Edited school newspaper	4.18
Leadership	3.95
Major in agriculture	- 9.25
Environmental	
"Snobbishness"	8.06
"Regularity of sleeping habits"	- 4.50
Institution in Northeast	4.03

NOTE: (see Table 19)

SUMMARY AND CONCLUSIONS

Among disadvantaged students, a greater proportion of blacks aspire to postgraduate education than nonblacks. Disadvantaged students receive better grades in high school than the random-student sample. However, their SAT scores are, in general, lower. Disadvantaged students also achieve higher grades than the random sample students while in college. The dropout rate tends to be higher among black students, whether from the disadvantaged or random group.

Disadvantaged students rate themselves high on drive to achieve and social self-confidence. A comparison of students' self-ratings and life objectives at the beginning of college and at the end of one year in college indicated that disadvantaged students enhance their self-esteem and increase their educational and occupational aspirations as they complete one year of their college work.

With respect to the types of institutions attended by disadvantaged students, we found that most black, disadvantaged students attend small liberal arts colleges, whereas most of the nonblack disadvantaged students attend junior colleges.

The best predictors of educational outcomes in this study were early achievements and aspirations. Students who move from home to attend college are also less likely to return for a second year of college at that institution. Although high school grades and scholastic aptitude are the best predictors of freshman GPA, disadvantaged students at universities and at selective institutions tend to receive lower grades than students attending either four-year colleges or less selective institutions. Also, if students worry about finances or have to work for pay while in college, their grades are

lower than the rest of the sample.

With respect to career plans at the completion of the freshman college year, early career plans and choice of majors in the freshman year are predictive of similar career aspirations a year later. The less permissive environments seem to reinforce career choices in engineering, whereas colleges with personalized classroom experiences influence choices in secondary education.

Students attending larger institutions are more likely to show high achievement drive at the end of freshman year than students in smaller institutions.

Leadership qualities are more likely to emerge or be reinforced in the less cohesive and more competitive institutions.

Disadvantaged students who attend institutions in which most of the student body works are more likely to claim greater social self-confidence at the end of freshman year.

Institutions in the Northeast have a positive impact on self-rating of "understanding of others."

In general, our findings suggest that cohesive and personal school environments have positive effects on most of the educational outcomes. However, personal qualities emerge differentially in the various college environments. The size of an institution has a positive effect on drive to achieve. Competitive and less cohesive environments affect leadership, and work experience has a positive impact over time on social self-confidence.

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APPENDIX A

Survey Questionnaires

STUDENT INFORMATION FORM

YOUR NAME(please print) _____
First Middle or Maiden Last

HOME STREET ADDRESS _____

_____
CITY STATE ZIP CODE (if known)

Note: The information in this report is being collected through the American Council on Education as part of a study of this year's entering class. Please complete all items. Your name and address has been requested in order to facilitate mail follow-up studies. Your responses will be used only in group summaries for research purposes, and will not be identified with you individually.

Social Security Number
(if known)

Date of Birth _____ _____ _____
Month Day Year

If you recently took any of the national achievement tests and happen to remember your score, fill in the appropriate information:

	Score		Score
SAT Verbal		ACT Composite	
SAT Math		NMSC Selection Score	

DIRECTIONS: Your responses will be read by an automatic scanning device. Your careful observance of these few simple rules will be most appreciated.

Use only black lead pencil (No. 2½ or softer).
Make heavy black marks that fill the circle.
Erase cleanly any answer you wish to change.
Make no stray markings of any kind.

	Yes	No
Example: Will marks made with ball pen or fountain pen be properly read?	○	●

1. Your Sex: Male ○ Female ○

2. From what kind of secondary school did you graduate?
(Mark one)
Public ○
Private (denominational) ○
Private (nondenominational) ○
Other ○

3. What was your average grade in secondary school?
(Mark one)
A or A+ ○ B- ○
A- ○ C+ ○
B+ ○ C ○
B ○ C- ○

4. What is the highest academic degree that you intend to obtain? (Mark one)
None ○
Associate (or equivalent) ○
Bachelor's degree (B.A., B.S., etc.) ○
Master's degree (M.A., M.S., etc.) ○
Ph.D. or Ed.D ○
M.D., D.D.S., or D.V.M. ○
LL.B. or J.D ○
B.D. ○
Other ○

5. The following questions deal with accomplishments that might possibly apply to your high school years. Do not be discouraged by this list; it covers many areas of interest and few students will be able to say "yes" to many items.
(Mark all that apply)
Was elected president of one or more student organizations (recognized by the school) ○
Received a high rating (Good, Excellent) in a state or regional music contest ○
Participated in a state or regional speech or debate contest ○
Had a major part in a play ○
Won a varsity letter (sports) ○
Won a prize or award in an art competition ○
Edited the school paper, yearbook, or literary magazine ○
Had poems, stories, essays, or articles published ○
Participated in a National Science Foundation summer program ○
Placed (first, second, or third) in a state or regional science contest ○
Was a member of a scholastic honor society ○
Won a Certificate of Merit or Letter of Commendation in the National ○

6. Do you have any concern about your ability to finance your college education? (Mark one)

- None (I am confident that I will have sufficient funds) ○
- Some concern (but I will probably have enough funds) ○
- Major concern (not sure I will be able to complete college) ○

7. Through what source do you intend to finance the first year of your undergraduate education? (Mark one for each item)

	Major Source	Minor Source	Not a Source
Employment during college	○	○	○
Employment during summer	○	○	○
Scholarship	○	○	○
G. I. Bill	○	○	○
Personal savings	○	○	○
Tuition deferment loan from college	○	○	○
Parental aid	○	○	○
Federal government	○	○	○
Commercial loan	○	○	○

8. What is your racial background? (Mark one)

- Caucasian ○
- Negro ○
- American Indian ○
- Oriental ○
- Other ○

9. What is the highest level of formal education obtained by your parents? (Mark one in each column)

	Father	Mother
Grammar school or less	○	○
Some high school	○	○
High school graduate	○	○
Some college	○	○
College degree	○	○
Postgraduate degree	○	○

10. What is your best estimate of the total income last year of your parental family (not your own family if you are married)? Consider annual income from all sources before taxes.

- Less than $4,000 ○
- $4,000–$5,999 ○
- $6,000–$7,999 ○
- $8,000–$9,999 ○
- $10,000–$14,999 ○
- $15,000–$19,999 ○
- $20,000–$24,999 ○
- $25,000–$29,999 ○
- $30,000 or more ○

11. Mark one in each column below:

	Religion in Which You Were Reared	Your Present Religious Preference
Protestant	○	○
Roman Catholic	○	○
Jewish	○	○
Other	○	○
None	○	○

12. In deciding where to go to college, through what source did this college first come to your attention? (Mark one)

- Relative ○
- Friend ○
- High school counselor or teacher ○
- Professional counseling or college placement service ○
- This college or a representative from this college ○
- Other source ○
- I cannot recall ○

13. To what extent do you think each of the following describes the psychological climate or atmosphere at this college? (Mark one answer for each item)

	Very Descriptive	In Between	Not at all Descriptive
Intellectual	○	○	○
Snobbish	○	○	○
Social	○	○	○
Victorian	○	○	○
Practical-minded	○	○	○
Warm	○	○	○
Realistic	○	○	○
Liberal	○	○	○

14. Answer each of the following as you think it applies to this college:

	Yes	No
The students are under a great deal of pressure to get high grades	○	○
The student body is apathetic and has little "school spirit"	○	○
Most of the students are of a very high calibre academically	○	○
There is a keen competition among most of the students for high grades	○	○
Freshmen have to take orders from upperclassmen for a period of time	○	○
There isn't much to do except to go to class and study	○	○
I felt "lost" when I first came to the campus	○	○
Being in this college builds poise and maturity	○	○
Athletics are overemphasized	○	○
The classes are usually run in a very informal manner	○	○
Most students are more like "numbers in a book"	○	○

15. Are you:

- An only child (Mark and skip to number 20) ○
- The first-born (but not an only child) ○
- The second-born ○
- The third-born ○
- Fourth (or later) born ○

16. How many brothers and sisters now living do you have? (Mark one)

- None (Mark and skip to number 20) ○

1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 or more ○

17. Mark one circle for each of your brothers and sisters between the ages of 13 and 23

	13	14	15	16	17	18	19	20	21	22	23
Brothers	○	○	○	○	○	○	○	○	○	○	○
Sisters	○	○	○	○	○	○	○	○	○	○	○

18. Are you a twin? (Mark one)

- No. (Mark and skip to number 20) ○
- Yes, identical ○
- Yes, fraternal same sex ○
- Yes, fraternal opposite sex ○

19. Is your twin attending college?

- No ○
- Yes, the same college ○
- Yes, a different college ○

20. Mark one in each column:

	Your current home state	Your birthplace	Your father's birthplace	Your mother's birthplace
Alabama	○	○	○	○
Alaska	○	○	○	○
Arizona	○	○	○	○
Arkansas	○	○	○	○
California	○	○	○	○
Colorado	○	○	○	○
Connecticut	○	○	○	○
Delaware	○	○	○	○
D. C.	○	○	○	○
Florida	○	○	○	○
Georgia	○	○	○	○
Hawaii	○	○	○	○
Idaho	○	○	○	○
Illinois	○	○	○	○
Indiana	○	○	○	○
Iowa	○	○	○	○
Kansas	○	○	○	○
Kentucky	○	○	○	○
Louisiana	○	○	○	○
Maine	○	○	○	○
Maryland	○	○	○	○
Massachusetts	○	○	○	○
Michigan	○	○	○	○
Minnesota	○	○	○	○
Mississippi	○	○	○	○
Missouri	○	○	○	○
Montana	○	○	○	○
Nebraska	○	○	○	○
Nevada	○	○	○	○
New Hampshire	○	○	○	○
New Jersey	○	○	○	○
New Mexico	○	○	○	○
New York	○	○	○	○
North Carolina	○	○	○	○
North Dakota	○	○	○	○
Ohio	○	○	○	○
Oklahoma	○	○	○	○
Oregon	○	○	○	○
Pennsylvania	○	○	○	○
Rhode Island	○	○	○	○
South Carolina	○	○	○	○
South Dakota	○	○	○	○
Tennessee	○	○	○	○
Texas	○	○	○	○
Utah	○	○	○	○
Vermont	○	○	○	○
Virginia	○	○	○	○
Washington	○	○	○	○
West Virginia	○	○	○	○
Wisconsin	○	○	○	○
Wyoming	○	○	○	○
Latin America	○	○	○	○
Europe	○	○	○	○
Africa	○	○	○	○
Asia	○	○	○	○
Other	○	○	○	○

21. Below is a list of 66 different undergraduate major fields grouped into general categories. Mark only three of the 66 fields as follows:

① First choice (your probable major field of study).
② Second choice.
Ⓛ The field of study which is least appealing to you.

Arts and Humanities

Architecture	①	②	Ⓛ
English (literature)	①	②	Ⓛ
Fine arts	①	②	Ⓛ
History	①	②	Ⓛ
Journalism (writing)	①	②	Ⓛ
Language (modern)	①	②	Ⓛ
Language (other)	①	②	Ⓛ
Music	①	②	Ⓛ
Philosophy	①	②	Ⓛ
Speech and drama	①	②	Ⓛ
Theology	①	②	Ⓛ
Other	①	②	Ⓛ

Biological Science

Biology (general)	①	②	Ⓛ
Biochemistry	①	②	Ⓛ
Biophysics	①	②	Ⓛ
Botany	①	②	Ⓛ
Zoology	①	②	Ⓛ
Other	①	②	Ⓛ

Business

Accounting	①	②	Ⓛ
Business admin.	①	②	Ⓛ
Electronic data processing	①	②	Ⓛ
Secretarial studies	①	②	Ⓛ
Other	①	②	Ⓛ

Engineering

Aeronautical	①	②	Ⓛ
Civil	①	②	Ⓛ
Chemical	①	②	Ⓛ
Electrical	①	②	Ⓛ
Industrial	①	②	Ⓛ
Mechanical	①	②	Ⓛ
Other	①	②	Ⓛ

Physical Science

Chemistry	①	②	Ⓛ
Earth science	①	②	Ⓛ
Mathematics	①	②	Ⓛ
Physics	①	②	Ⓛ
Statistics	①	②	Ⓛ
Other	①	②	Ⓛ

Professional

Health Technology (medical, dental, laboratory)	①	②	Ⓛ
Nursing	①	②	Ⓛ
Pharmacy	①	②	Ⓛ
Predentistry	①	②	Ⓛ
Prelaw	①	②	Ⓛ
Premedical	①	②	Ⓛ
Preveterinary	①	②	Ⓛ
Therapy (occupat., physical, speech)	①	②	Ⓛ
Other	①	②	Ⓛ

Social Science

Anthropology	①	②	Ⓛ
Economics	①	②	Ⓛ
Education	①	②	Ⓛ
History	①	②	Ⓛ
Political science (government, int. relations)	①	②	Ⓛ
Psychology	①	②	Ⓛ
Social work	①	②	Ⓛ
Sociology	①	②	Ⓛ
Other	①	②	Ⓛ

Other Fields

Agriculture	①	②	Ⓛ
Communications (radio, T. V., etc.)	①	②	Ⓛ
Electronics (technology)	①	②	Ⓛ
Forestry	①	②	Ⓛ
Home economics	①	②	Ⓛ
Industrial arts	①	②	Ⓛ
Library science	①	②	Ⓛ
Military science	①	②	Ⓛ
Physical education and recreation	①	②	Ⓛ
Other (technical)	①	②	Ⓛ
Other (nontechnical)	①	②	Ⓛ
Undecided	①	②	Ⓛ

Please be sure that only three circles have been marked in the above list.

22. Probable Career Occupation

Note: Make only three responses, one in each column
① First Choice
② Second Choice
Ⓛ Least Appealing

Accountant or actuary	①	②	Ⓛ
Actor or entertainer	①	②	Ⓛ
Architect	①	②	Ⓛ
Artist	①	②	Ⓛ
Business (clerical)	①	②	Ⓛ
Business executive (management, administrator)	①	②	Ⓛ
Business owner or proprietor	①	②	Ⓛ
Business salesman or buyer	①	②	Ⓛ
Clergyman (minister, priest)	①	②	Ⓛ
Clergy (other religious)	①	②	Ⓛ
Clinical psychologist	①	②	Ⓛ
College teacher	①	②	Ⓛ
Computer programmer	①	②	Ⓛ
Conservationist or forester	①	②	Ⓛ
Dentist (including orthodontist)	①	②	Ⓛ
Dietitian or home economist	①	②	Ⓛ
Engineer	①	②	Ⓛ
Farmer or rancher	①	②	Ⓛ
Foreign service worker (including diplomat)	①	②	Ⓛ
Housewife	①	②	Ⓛ
Interior decorator (including designer)	①	②	Ⓛ
Interpreter (translator)	①	②	Ⓛ
Lab technician or hygienist	①	②	Ⓛ
Law enforcement officer	①	②	Ⓛ
Lawyer (attorney)	①	②	Ⓛ
Military service (career)	①	②	Ⓛ
Musician (performer, composer)	①	②	Ⓛ
Nurse	①	②	Ⓛ
Optometrist	①	②	Ⓛ
Pharmacist	①	②	Ⓛ
Physician	①	②	Ⓛ
School counselor	①	②	Ⓛ
School principal or superintendent	①	②	Ⓛ
Scientific researcher	①	②	Ⓛ
Social worker	①	②	Ⓛ
Statistician	①	②	Ⓛ
Therapist (physical, occupational, speech)	①	②	Ⓛ
Teacher (elementary)	①	②	Ⓛ
Teacher (secondary)	①	②	Ⓛ
Veterinarian	①	②	Ⓛ
Writer or journalist	①	②	Ⓛ
Skilled trades	①	②	Ⓛ
Other	①	②	Ⓛ
Undecided	①	②	Ⓛ

23. Below is a general list of things that students sometimes do. Indicate which of these things you did during the past year in school. If you engaged in an activity frequently, Mark "f." If you engaged in an activity one or more times, but not frequently, Mark "o"(occasionally). Mark "n"(not at all) if you have not performed the activity during the past year.
(Mark one for each item)

	Frequently	Occasionally	Not at all
Voted in a student election	F	O	N
Came late to class	F	O	N
Listened to New Orlean's (Dixieland) jazz	F	O	N
Gambled with cards or dice	F	O	N
Played a musical instrument	F	O	N
Took a nap or rest during the day	F	O	N
Drove a car	F	O	N
Stayed up all night	F	O	N
Studied in the library	F	O	N
Attended a ballet performance	F	O	N
Participated on the speech or debate team	F	O	N
Acted in plays	F	O	N
Sang in a choir or glee club	F	O	N
Argued with other students	F	O	N
Called a teacher by his or her first name	F	O	N
Wrote an article for the school paper or literary magazine	F	O	N
Had a blind date	F	O	N
Wrote a short story or poem (not for a class)	F	O	N
Played in a school band	F	O	N
Played in a school orchestra	F	O	N
Smoked cigarettes	F	O	N
Attended Sunday school	F	O	N
Checked out a book or journal from the school library	F	O	N
Went to the movies	F	O	N
Discussed how to make money with other students	F	O	N
Said grace before meals	F	O	N
Prayed (not including grace before meals)	F	O	N
Listened to folk music	F	O	N
Attended a public recital or concert	F	O	N
Made wisecracks in class	F	O	N
Arranged a date for another student	F	O	N
Went to an over-night or week-end party	F	O	N
Took weight-reducing or dietary formula	F	O	N
Drank beer	F	O	N
Overslept and missed a class or appointment	F	O	N
Typed a homework assignment	F	O	N
Participated in an informal group sing	F	O	N
Drank wine	F	O	N
Cribbed on an examination	F	O	N
Turned in a paper or theme late	F	O	N
Tried on clothes in a store without buying anything	F	O	N
Asked questions in class	F	O	N
Attended church	F	O	N
Participated in organized demonstrations	F	O	N

24. Indicate the importance to you personally of each of the following:
(Mark one for each item)

	Essential	Very Important	Somewhat Important	Not Important
Becoming accomplished in one of the performing arts (acting, dancing, etc.)	E	V	S	N
Becoming an authority on a special subject in my subject field	E	V	S	N
Obtaining recognition from my colleagues for contributions in my special field	E	V	S	N
Becoming an accomplished musician (performer or composer)	E	V	S	N
Becoming an expert in finance and commerce	E	V	S	N
Having administrative responsibility for the work of others	E	V	S	N
Being very well-off financially	E	V	S	N
Helping others who are in difficulty	E	V	S	N
Participating in an organization like the Peace Corps or Vista	E	V	S	N
Becoming an outstanding athlete	E	V	S	N
Becoming a community leader	E	V	S	N
Making a theoretical contribution to science	E	V	S	N
Writing original works (poems, novels, short stories, etc.)	E	V	S	N
Never being obligated to people	E	V	S	N
Creating artistic work (painting, sculpture, decorating, etc.)	E	V	S	N
Keeping up to date with political affairs	E	V	S	N
Being successful in a business of my own	E	V	S	N

25. Rate yourself on each of the following traits as you really think you are when compared with the average student of your own age. We want the most accurate estimate of how you see yourself. (Mark one for each item)

Trait	Highest 10 Percent	Above Average	Average	Below Average	Lowest 10 Percent
Academic ability	O	O	O	O	O
Athletic ability	O	O	O	O	O
Artistic ability	O	O	O	O	O
Cheerfulness	O	O	O	O	O
Defensiveness	O	O	O	O	O
Drive to achieve	O	O	O	O	O
Leadership ability	O	O	O	O	O
Mathematical ability	O	O	O	O	O
Mechanical ability	O	O	O	O	O
Originality	O	O	O	O	O
Political conservatism	O	O	O	O	O
Political liberalism	O	O	O	O	O
Popularity	O	O	O	O	O
Popularity with the opposite sex	O	O	O	O	O
Public speaking ability	O	O	O	O	O
Self-confidence (intellectual)	O	O	O	O	O
Self-confidence (social)	O	O	O	O	O
Sensitivity to criticism	O	O	O	O	O
Stubbornness	O	O	O	O	O
Understanding of others	O	O	O	O	O
Writing ability	O	O	O	O	O

26. How old will you be on December 31 of this year?
(Mark one)

16 or younger	O	20	O
17	O	21	O
18	O	Older than 21	O
19	O		

27. (If you are married, omit the following question)
What is your best guess as to the chances that you will marry

	While in College?	Within a Year after College?
Very good chance	O	O
Some chance	O	O
Very little chance	O	O
No chance	O	O

Prepared by American Council on Education 1785 Massachusetts Ave., N.W. Washington, D.C.

AMERICAN COUNCIL ON EDUCATION

WASHINGTON, D.C. 20036

AUGUST, 1967

Dear Student:

You may remember that when you first entered college in 1966 you completed a brief information form in which you indicated your educational and career plans. Our research staff is now engaged in several studies that are intended to contribute to an understanding of how students are affected by their college experiences. Such studies will yield useful information for re-examining educational policy and practice.

We should greatly appreciate your completing this brief questionnaire and returning it to us in the enclosed envelope. All of the information is to be coded and used in group comparisons for research purposes only, so your responses will be held in the strictest professional confidence.

Since we are following up only a limited sample of students, it is important to secure as complete a response as possible. We hope that you will be able to participate.

Thank you for your consideration.

Sincerely yours,

Logan Wilson

Logan Wilson, President

DIRECTIONS: Your responses will be read by an automatic scanning device. Your careful observance of these few simple rules will be most appreciated.

Use only black lead pencil (No. 2½ or softer).
Make heavy black marks that fill the circle.
Erase cleanly any answer you wish to change.
Make no stray markings of any kind.

	Yes	No
Example: Will marks made with ball pen or fountain pen be properly read?	○	●

1. Your Sex: Male ○ Female ○

2. Please estimate your average grade so far in college.

A or A+ ○	B ○	C ○
A- ○	B- ○	D ○
B+ ○	C+ ○	

3. What is the highest academic degree that you intend to obtain? (Mark one)

- None ○
- Associate (or equivalent) ○
- Bachelor's degree (B.A., B.S., etc.) ○
- Master's degree (M.A., M.S., etc.) ○
- Ph.D. or Ed. D. ○
- M.D., D.D.S., or D.V.M. ○
- LL.B. or J.D. ○
- B.D. ○
- Other ○

4. Since entering college in 1966, how much undergraduate education have you completed? (Convert part-time attendance into full-time equivalents):

- Less than one term (quarter, semester, trimester) ○
- More than one term but less than one academic year ○
- One academic year ○
- More than one academic year ○

5. Since entering college in the fall of 1966 have you changed institutions or dropped out of college for any period of time? (Mark only one)

- No
  - and I plan to attend the same college this fall ○
  - but I do not plan to return to the same college this fall ○
- Yes
  - I was asked to leave because of unsatisfactory academic work ○
  - I was asked to leave for disciplinary reasons ○
  - I left college voluntarily ○

6. Will you be a full-time student this fall (1967)? (Mark one)

- Yes ○
- No, primarily because of (mark the one most important reason):
  - a change in my interests and/or career goals ○
  - dissatisfaction with college ○
  - limited finances ○
  - recent or impending marriage ○
  - my poor academic record ○
  - the draft ○
  - illness or accident ○
  - other reason ○

7. How much money have you earned since entering college in 1966?

	None	$1–$199	$200–$399	$400–$599	$600–$799	$800–$999	$1,0 or mo
Academic year 1966–1967	○	○	○	○	○	○	○
Summer 1967	○	○	○	○	○	○	○

8. Where did you live for most of the time while you were growing up?

- On a farm ○
- In a small town ○
- In a moderate size town or city ○
- In the suburb of a large city ○
- In a large city ○

9. Where have you lived since entering college in 1966? (If you lived in several places mark the one place you lived the majority of the time.) Mark one in each column:

	Fall 1966	Winter-Spring 1966-67	Summer 1967
With parents	○	○	○
Other private home, apartment or room	○	○	○
College dormitory	○	○	○
Fraternity or sorority house	○	○	○
Other campus student housing	○	○	○
Other	○	○	○

10. Indicate below the source(s) you used to finance your college and living expenses last year. (Mark one in each row)

	Not a Source	Minor Source (1% – 25%)	Minor Source (26% – 50%)	Major Source (more than 50%)
Support from family (excluding repayable loans)	○	○	○	○
Employment during college year	○	○	○	○
Summer employment	○	○	○	○
Scholarship or gift from:				
State or local government	○	○	○	○
Federal government	○	○	○	○
Private source (individual, Foundation, etc.)	○	○	○	○
Your college (other than above)	○	○	○	○
Repayable loans from:				
Your college	○	○	○	○
State or local government	○	○	○	○
Federal Government	○	○	○	○
A bank or other commercial organization	○	○	○	○
Other repayable loan	○	○	○	○
Other sources (personal savings, etc.)	○	○	○	○

11. All in all, in terms of your own needs and desires, how much of the following did you receive during the past year at college? (Mark one in each row)

	Too much or Too many	Just about the right amount	Not enough
Freedom in course selection	○	○	○
Social life	○	○	○
Personal contacts with classmates	○	○	○
Work required of you in courses	○	○	○
Outlets for creative activities	○	○	○
Sleep	○	○	○
Exercise	○	○	○
Personal contacts with faculty	○	○	○
Personal contacts with family	○	○	○
Advice and guidance from faculty and staff	○	○	○

12. To what extent do you think each of the following describes the psychological climate or atmosphere at your college? (Mark one answer for each item)

	Very Descriptive	In Between	Not at all Descriptive
Intellectual	○	○	○
Snobbish	○	○	○
Social	○	○	○
Victorian	○	○	○
Practical-minded	○	○	○
Warm	○	○	○
Realistic	○	○	○
Liberal	○	○	○

13. Answer each of the following as you think it applies to your college:

	Yes	No
The students are under a great deal of pressure to get high grades	○	○
The student body is apathetic and has little "school spirit"	○	○
Most of the students are of a very high calibre academically	○	○
There is a keen competition among most of the students for high grades	○	○
Freshmen have to take orders from upperclassmen for a period of time	○	○
There isn't much to do except to go to class and study	○	○
I felt "lost" when I first came to the campus	○	○
Being in this college builds poise and maturity	○	○
Athletics are overemphasized	○	○
The classes are usually run in a very informal manner	○	○
Most students are more like "numbers in a book"	○	○

14. Which of the following experiences applies to you during the past year? (Mark all that apply)

	Yes
Elected to a student office	○
Played on a varsity athletic team	○
Changed your long-term career plans	○
Flunked a course	○
Changed your major field	○
Fell in love	○
Got married	○
Had a lead in a college play	○
Wrote an article for the school paper or magazine	○
Received treatment in the Student Health Center	○
Participated in an honors program	○

15. Mark only three responses, one in each column.

Your probable career occupation.
Your father's occupation.
Ⓨ Ⓕ Ⓜ Your mother's occupation.

NOTE: If your father (or mother) is deceased, please indicate his (her) last occupation.

Accountant or actuary	Ⓨ Ⓕ Ⓜ
Actor or entertainer	Ⓨ Ⓕ Ⓜ
Architect	Ⓨ Ⓕ Ⓜ
Artist	Ⓨ Ⓕ Ⓜ
Business (clerical)	Ⓨ Ⓕ Ⓜ
Business executive (management, administrator)	Ⓨ Ⓕ Ⓜ
Business owner or proprietor	Ⓨ Ⓕ Ⓜ
Business salesman or buyer	Ⓨ Ⓕ Ⓜ
Clergyman (minister, priest)	Ⓨ Ⓕ Ⓜ
Clergy (other religious)	Ⓨ Ⓕ Ⓜ
Clinical psychologist	Ⓨ Ⓕ Ⓜ
College teacher	Ⓨ Ⓕ Ⓜ
Computer programmer	Ⓨ Ⓕ Ⓜ
Conservationist or forester	Ⓨ Ⓕ Ⓜ
Dentist (including orthodontist)	Ⓨ Ⓕ Ⓜ
Dietitian or home economist	Ⓨ Ⓕ Ⓜ
Engineer	Ⓨ Ⓕ Ⓜ
Farmer or rancher	Ⓨ Ⓕ Ⓜ
Foreign service worker (including diplomat)	Ⓨ Ⓕ Ⓜ
Housewife	Ⓨ Ⓕ Ⓜ
Interior decorator (including designer)	Ⓨ Ⓕ Ⓜ
Interpretor (translator)	Ⓨ Ⓕ Ⓜ
Lab technician or hygienist	Ⓨ Ⓕ Ⓜ
Law enforcement officer	Ⓨ Ⓕ Ⓜ
Lawyer (attorney)	Ⓨ Ⓕ Ⓜ
Military service (career)	Ⓨ Ⓕ Ⓜ
Musician (performer, composer)	Ⓨ Ⓕ Ⓜ
Nurse	Ⓨ Ⓕ Ⓜ
Optometrist	Ⓨ Ⓕ Ⓜ
Pharmacist	Ⓨ Ⓕ Ⓜ
Physician	Ⓨ Ⓕ Ⓜ
School counselor	Ⓨ Ⓕ Ⓜ
School principal or superintendent	Ⓨ Ⓕ Ⓜ
Scientific researcher	Ⓨ Ⓕ Ⓜ
Social worker	Ⓨ Ⓕ Ⓜ
Statistician	Ⓨ Ⓕ Ⓜ
Therapist (physical, occupational, speech)	Ⓨ Ⓕ Ⓜ
Teacher (elementary)	Ⓨ Ⓕ Ⓜ
Teacher (secondary)	Ⓨ Ⓕ Ⓜ
Veterinarian	Ⓨ Ⓕ Ⓜ
Writer or journalist	Ⓨ Ⓕ Ⓜ
Skilled trades	Ⓨ Ⓕ Ⓜ
Other	Ⓨ
Undecided	Ⓨ
Laborer (unskilled)	Ⓕ Ⓜ
Semi-skilled worker	Ⓕ Ⓜ
Other occupation	Ⓕ Ⓜ
Unemployed	Ⓕ

16. What action would be taken by the administration at your college if a student in your living quarters were known to have done the following? (Mark one response for each item)

NOTE: If you lived only at home, skip this question.

	No policy against this	Reprimand or minor disciplinary action	Major disciplinary action (possible expulsion from college)	Sure expulsion from college
Coming in from a date two hours late	O	O	O	O
Cheating on exams	O	O	O	O
Drinking in living quarters	O	O	O	O
Being drunk	O	O	O	O
Being alone with a date in your room during the day	O	O	O	O
Being alone with a date in your room at night	O	O	O	O
Staying off campus overnight without permission	O	O	O	O
Organizing a student demonstration against some administrative policy	O	O	O	O
Writing off-color stories in a student publication	O	O	O	O
Participating in a water fight or dormitory raid	O	O	O	O
Using LSD	O	O	O	O
Using marijuana	O	O	O	O

17. Think about the course you took this past year which was most closely related to your primary field of interest. Please mark "yes" for all the following statements which apply to this course. (If the course had a lab portion, mark "yes" only for those items which apply to the lecture portion.)

	Yes
The class met only at a regularly scheduled time and place	O
Students had assigned seating	O
The lectures followed the textbook closely	O
The instructor called students by their first names	O
The instructor encouraged a lot of class discussion	O
I knew the instructor's first name	O
I was in the instructor's office one or more times	O
The instructor was enthusiastic	O
The instructor had a good sense of humor	O
The instructor was often dull and uninteresting	O
The instructor knew me by name	O
I sometimes argued openly with the instructor	O
I usually typed my written assignments	O
I was a guest in the instructor's home one or more times	O

18. Of which of the following college organizations were you a member during the past year? (Mark all that apply)

	Yes
National Social Fraternity or Sorority	O
Local Social Fraternity or Sorority	O
Intramural athletic team	O
College athletic team	O
Choir or glee club	O
Marching band	O
Honorary (subject matter) Fraternity	O

19. Since entering college have you received any professional vocational counseling?

No	O
Yes: one hour or less	O
2 – 3 hours	O
4 – 5 hours	O
more than 5 hours	O

20. Below is a general list of things that students sometimes do. Indicate which of these things you did during the past year. If you engaged in an activity frequently, mark "F." If you engaged in an activity one or more times, but not frequently, mark "O" (occasionally). Mark "N" (not at all) if you have not performed the activity during the past year. (Mark one for each item)

	Frequently	Occasionally	Not at all
Voted in a student election	F	O	N
Came late to class	F	O	N
Listened to New Orlean's (Dixieland) jazz	F	O	N
Gambled with cards or dice	F	O	N
Played a musical instrument	F	O	N
Took a nap or rest during the day	F	O	N
Drove a car	F	O	N
Stayed up all night	F	O	N
Studied in the library	F	O	N
Attended a ballet performance	F	O	N
Participated on the speech or debate team	F	O	N
Acted in plays	F	O	N
Sang in a choir or glee club	F	O	N
Argued with other students	F	O	N
Called a teacher by his or her first name	F	O	N
Wrote an article for the college paper or literary magazine	F	O	N
Had a blind date	F	O	N
Wrote a short story or poem (not for class)	F	O	N
Played in the college band	F	O	N
Played in the college orchestra	F	O	N
Smoked cigarettes	F	O	N
Attended Sunday school	F	O	N
Checked out a book or journal from the college library	F	O	N
Went to the movies	F	O	N
Discussed how to make money with other students	F	O	N
Said grace before meals	F	O	N
Prayed (not including grace before meals)	F	O	N
Listened to folk music	F	O	N
Attended a public recital or concert	F	O	N
Made wisecracks in class	F	O	N
Arranged a date for another student	F	O	N
Went to an over-night or week-end party	F	O	N
Took weight-reducing or dietary formula	F	O	N
Drank beer	F	O	N
Overslept and missed a class or appointment	F	O	N
Typed a homework assignment	F	O	N
Participated in an informal group sing	F	O	N
Drank wine	F	O	N
Cribbed on an examination	F	O	N
Turned in a paper or theme late	F	O	N
Tried on clothes in a store without buying anything	F	O	N
Asked questions in class	F	O	N
Attended church	F	O	N
Participated in a demonstration against racial discrimination	F	O	N
Participated in a demonstration against some administrative policy of the college	F	O	N
Participated in a demonstration against the war in Viet Nam	F	O	N
Had psychotherapy or personal counseling	F	O	N
Tried to get an instructor to change a test or course grade	F	O	N
Slept or dozed in class	F	O	N
Got a traffic ticket	F	O	N
Tutored another student	F	O	N

21. Indicate the importance to you personally of each of the following: (Mark one for each item)

	Essential	Very Important	Somewhat Important	Not Important
Becoming accomplished in one of the performing arts (acting, dancing, etc.)	E	V	S	N
Becoming an authority on a special subject in my subject field	E	V	S	N
Obtaining recognition from my colleagues for contributions in my special field	E	V	S	N
Becoming an accomplished musician (performer or composer)	E	V	S	N
Becoming an expert in finance and commerce	E	V	S	N
Having administrative responsibility for the work of others	E	V	S	N
Being very well-off financially	E	V	S	N
Helping others who are in difficulty	E	V	S	N
Participating in an organization like the Peace Corps or Vista	E	V	S	N
Becoming an outstanding athlete	E	V	S	N
Becoming a community leader	E	V	S	N
Making a theoretical contribution to science	E	V	S	N
Writing original works (poems, short stories, etc.)	E	V	S	N
Never being obligated to people	E	V	S	N
Creating artistic work (painting, sculpture, decorating, etc.)	E	V	S	N
Keeping up to date with political affairs	E	V	S	N
Being successful in a business of my own	E	V	S	N

22. Rate yourself on each of the following traits as you really think you are when compared with the average student of your own age. We want the most accurate estimate of how you see yourself. (Mark one for each item)

Trait	Highest 10 Percent	Above Average	Average	Below Average	Lowest 10 Percent
Academic ability	O	O	O	O	O
Athletic ability	O	O	O	O	O
Artistic ability	O	O	O	O	O
Cheerfulness	O	O	O	O	O
Defensiveness	O	O	O	O	O
Drive to achieve	O	O	O	O	O
Leadership ability	O	O	O	O	O
Mathematical ability	O	O	O	O	O
Mechanical ability	O	O	O	O	O
Originality	O	O	O	O	O
Political conservatism	O	O	O	O	O
Political liberalism	O	O	O	O	O
Popularity	O	O	O	O	O
Popularity with the opposite sex	O	O	O	O	O
Public speaking ability	O	O	O	O	O
Self-confidence (intellectual)	O	O	O	O	O
Self-confidence (social)	O	O	O	O	O
Sensitivity to criticism	O	O	O	O	O
Stubbornness	O	O	O	O	O
Understanding of others	O	O	O	O	O
Writing ability	O	O	O	O	O

23. What is your over-all evaluation of your college? (Mark one)

- Very satisfied with my college ..... O
- Satisfied with my college ..... O
- On the fence ..... O
- Dissatisfied with my college ..... O
- Very dissatisfied with my college ..... O

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APPENDIX B

The ICA Dimensions

THE ICA DIMENSIONS

The inventory of college activities was comprised of items that deal with the student's subjective impression of the college image. Most of these items were developed to measure the frequency of an extensive variety of student behaviors. These items were analyzed and combined statistically into 33 salient dimensions of the undergraduate environment. The theoretical implications and research methodology of this work have been described in The College Environment by Alexander W. Astin (American Council on Education, 1968).

The dimensions in turn can be seen as dealing with several key areas of undergraduate life:

The peer environment--interpersonal behavior

The peer environment--noninterpersonal behavior

The classroom environment

The administrative environment

The college image.

The dimensions are statistically weighted summaries of the items listed for each. In the case of some of these dimensions a low score on one of the items was found empirically to be related to high scores on the others in the set, i.e., that item received a negative weight in the construction of the composite summary score. Scores on the scales are plotted on the attached profile. This profile has been done in terms of T-Scores based on the norms for the national population as established in our research program. (You may wish to refer to the corresponding percentiles which are also indicated on the chart.) Thus, if your school receives a score of 500 on any scale, it precisely matches the norm for that scale. To the degree it exceeds 500, your school exceeds the norms; similar reasoning applies to scores below the norm. Also included on the profile is a line indicating the mean scores obtained by all schools similar to yours, e.g., two-year colleges, etc.

Following this profile is a set of descriptions, one for each of the 33 summary dimensions. This description includes an indication of some of the major correlates of the dimension in addition to the implications of the component items.

The reader should note that the profile was based on information from the same number of respondents as was the first table containing the item percentages.

THE PEER ENVIRONMENT

A. Interpersonal Behavior

1. Competitiveness vs. Cooperativeness. Students at high-scoring, competitive institutions show a style of interaction that is characterized by risk-taking, adventurousness, and an aggressive desire to defeat or overcome an opponent. There is also some tendency toward impulsiveness and irresponsible behavior. Students at these institutions tend to see their college as impersonal and as treating students like "numbers in a book." Colleges for men and large universities tend to be highly competitive. Students at institutions with low scores show a pattern of interpersonal interaction which is characterized by cooperation, participation in organized student activities, strong religious interests, and sensitivity to and concern for the needs of others. They tend to see the college as being warm and as having high morale, and to view the faculty as going out of its way to help the student. Colleges for women and liberal arts colleges tend to have highly cooperative environments.

2. Organized Dating. High-scoring institutions have student bodies that engage frequently in prearranged or organized dates, often have blind dates, and have frequent parties and dances. Students tend to see their college as "sophisticated."

3. Independence. Student interaction at high-scoring institutions tends to be characterized by contentiousness, argumentativeness, frequent demonstrations against administrative policies, and frequent participation in athletics. The rate of drinking is also relatively high as is the rate of studying. Faculty in this independent environment tend to prefer essay exams over objective exams and are likely to be perceived by their students as emphasizing theoretical rather than practical concerns in their teaching. Students in high-scoring schools are strongly motivated by graduate training and show a high rate of interest in careers either as scientists or a entrepreneurs. They tend to be highly able academically and to have highly educated parents. Colleges for men, technological institutions, and private, nonsectarian institutions tend to obtain high scores on this dimension.

4. Cohesiveness. Students in the high-scoring institutions typically have several close friends among their fellow students. A relatively high percentage of students tend to come from farm or rural backgrounds and to value getting along with people. The students also show a high degree of interest in watching athletic events. Hazing of freshmen is common in these highly cohesive institutions. Students in these institutions tend to regard their college environment as more practical-minded than theory-oriented. By contrast, students in low-scoring colleges are likely to come from the suburbs of large cities, to be highly able academically, and to see their college environment as "intense." They also tend to rate themselves as unconventional and as valuing originality. Typically, colleges that score low on this dimension tend to be highly selective. Nonsectarian liberal arts colleges and universities tend to have very low scores. Although most Protestant colleges tend to have highly cohesive environments, a few colleges in this group obtain average or even below-average scores.

5. Informal Dating. Students at high-scoring colleges frequently engage in dating of an informal or casual type (coke, coffee, or study dates). In addition, these undergraduates will frequently report falling in love, or breaking up with girlfriends or boyfriends during the college year. Coeducational colleges and colleges located in the West and Southwest tend to score relatively high. Students at low-scoring institutions frequently complain about not having enough dates. These institutions tend to be noncoeducational (colleges for men, in particular) and to be located in the Northeast.

B. Noninterpersonal Behavior

6. Femininity. Students in high-scoring institutions frequently engage in these behaviors: trying on clothes in stores, taking dietary formulas, crying, and attending fashion shows and ballet performances. Majors in artistic or social fields of study are common and students express a preference for working with people rather than with things. The high-scoring institutions on this factor are colleges for women. Students at the lowest-scoring institutions (typically, colleges for men) show an interest in sports, gambling, and playing chess. Many of them are frequently majoring in some area of science and technology and also planning careers in these fields.

7. Drinking vs. Religiousness. Students at high-scoring institutions frequently engage in social drinking. They also tend to be argumentative, independent, competitive, and above average in academic ability. They feel that their institution grants them a good deal of independence and that its policies are liberal. Students in low-scoring institutions frequently participate in formal religious activities: attending church and Sunday school, praying, saying grace, and reading the Bible. They frequently see their college as Victorian, practical-minded, warm, and as having high morale. They also report that the campus paper and humor magazine tend to be censored by the administration. Protestant institutions tend to score low on this factor, whereas private nonsectarian institutions tend to obtain high scores.

8. Musical and Artistic Ability

Students at high-scoring institutions are frequently involved in musical activities, both as performers and as listeners, and often attend cultural events such as lectures, stage plays, and art exhibits. The environment at high-scoring institutions tends to be more friendly and intimate than the average college environment. Low-scoring institutions manifest a high degree of competitiveness and relatively severe grading practices. Universities and, in particular, technological institutions tend to obtain very low scores.

9. Leisure Time. Students at high-scoring institutions spend a large percentage of their time going to the movies and playing games (cards, etc.). They tend to place a high value on having a good time and getting along with people.

10. Career Indecision. More of the students at high-scoring institutions change their major fields and long-term career plans. Engaging in vocational counseling also is fairly frequent at high-scoring institutions.

11. Regularity of Sleeping Habits. Students at high-scoring institutions tend to have more regular sleeping habits, frequently go to church, and often commute. Many high-scoring institutions enroll high proportions of Roman Catholic students. Students at low-scoring institutions have sleeping habits characterized by staying up all night, oversleeping and missing classes, taking a nap or rest during the day, and taking stay-awake pills. They typically live away from home at college. Many low-scoring institutions tend to enroll high percentages of students who come from highly educated and well-to-do families of the Protestant faith. Many low-scoring institutions are private and nonsectarian.

12. Use of Library. Students in high-scoring institutions frequently study in the library and check out books or journals.

13. Conflict with Regulations. Students at high-scoring institutions frequently lose privileges for infractions of college rules. They also attend church regularly and tend to be of the Roman Catholic faith. Most Roman Catholic institutions obtain high scores on this dimension, in contrast to most Protestant institutions.

14. Student Employment. This dimension is defined simply in terms of the percentage of students who work for pay during the school year.

15. Use of Automobiles. This dimension is defined in terms of the percentage of students who drive cars during the school year. Predominantly black colleges tend to obtain low scores.

THE CLASSROOM ENVIRONMENT

16. Involvement in Class. In high-scoring institutions, both instructors and students show a high degree of personal interest and involvement in the activities of the classroom. Instructors typically know their students' names, encourage class discussion, and call students by their first names. They frequently prepare "pop" quizzes and take attendance. Students at high-scoring institutions are likely to be religious, to select major fields in education and social science, to like teaching and working with people, and to see their college environment as "warm." Teachers colleges typically obtain very high scores on this factor. Classrooms in low-scoring institutions tend to be large and the instructors frequently are engaged in research. The students often oversleep and miss their classes; many do not speak out in class unless called upon. They tend to prefer vocations in the sciences, to be academically bright, and to value being original. They feel that the administration is not really very concerned about them as individuals and that they do not have enough contact with faculty or enough personal direction in their studies and courses. They do, however, typically report that the curricular offerings and facilities for research are of high quality. Nearly all the universities score low on this dimension.

17. Verbal Agressiveness. Students in high-scoring institutions frequently argue with each other and with the instructor during the class. They tend to ask questions frequently, make wisecracks in class, and speak out without waiting to be called on. Their instructors are more inclined to give essay (rather than objective) examinations. A high percentage of students in high-scoring institutions plan to go on to graduate training.

18. Extraversion of Instructor. Instructors in high-scoring colleges tend to be rated by their students as enthusiastic, as having a good sense of humor, and as being exceptionally well-grounded in the course subject matter. Instructors in low-scoring institutions tend to be rated dull, uninteresting, and as speaking in a monotone.

19. Familiarity with Instructor. In high-scoring colleges there tends to be a close personal relationship between students and instructors. High-scoring colleges also tend to be small and to have a high percentage of their students living on campus. Protestant institutions tend to obtain high scores on this dimension, whereas public institutions tend to obtain low scores.

20. Organization in Classroom. Instructors in high-scoring institutions frequently use assigned seating, take attendance, and hold their classes at a regularly scheduled time and place. The percentage of students who come late to class in such institutions is low.

21. Severity of Grading. This dimension is defined simply as the proportion of students who receive at least one failing grade during the freshman year. The average grade in high-scoring institutions tends to be low, and the instructors' lectures typically follow the textbook closely. Students in low-scoring institutions tend to have artistic and literary interests and to be above average in academic ability.

THE ADMINISTRATIVE ENVIRONMENT

22. Severity of Policy Against Drinking. High-scoring institutions tend to have relatively severe policies against student drinking. Students at such institutions tend to engage frequently in religious activities and to rate their college as high in morale but Victorian. High-scoring institutions are most likely to be sectarian. Students in low-scoring institutions tend to drink frequently, to be above average in academic ability, and to be highly motivated to go on for graduate training. Instructors in low-scoring institutions run their classes permissively and tend to be engaged in research. The environments of low-scoring institutions tend to be graded as "liberal" and the students are inclined to feel that they are granted a great deal of independence. Low-scoring institutions are most likely to be private and nonsectarian.

23. Against Aggression. High-scoring institutions have relatively severe policies against organizing demonstrations against administrative policy, participating in water fights or dormitory raids, and other forms of student aggression. In the typical classroom of high-scoring institutions, lectures tend to follow the textbook closely and objective examinations are preferred over essay exams. Students in these institutions typically believe that the campus paper and humor magazine are censored by the administration and that their fellow students seem very conforming. Students in low-scoring institutions tend to be highly able academically and to come from affluent socioeconomic backgrounds. They tend to rate the intellectual atmosphere as being more on the theoretical than on the practical side.

24. Against Heterosexual Activity. This dimension reflects the severity of administrative regulations against such actions as being alone with a date in the dormitory room and coming in late from dates (the latter regulation usually not applicable in the case of colleges for men). High-scoring institutions tend to have students who engage frequently in religious activities. These students report that the campus paper and humor magazine are censored by the administration and that the environment is Victorian. Students in low-scoring institutions tend to be highly able academically, to rate their colleges as liberal, and to feel that they are granted a great deal of independence by the college.

25. Against Cheating. This dimension reflects the severity of administrative policy against cheating. The highest-scoring institutions typically expel students who are found cheating on examinations. In such institutions there is generally less cheating on examinations.

THE COLLEGE IMAGE

26. Academic Competitiveness. In high-scoring institutions there is a high degree of perceived pressure for high grades and competitiveness among the students. Students at such colleges are likely to see their fellow students as being very able academically and as feeling that their college is superior to other colleges. These students also feel that their college has an outstanding reputation nationally and that its environment is both tense and enterprising. They tend to be highly able academically, and to spend many hours per week studying. In the low-scoring institutions, the students are inclined to feel that the amount of intellectual activity is small, that not enough work is required in class, and that the environment is "carefree." Almost all technological institutions tend to score high on this dimension, whereas most teachers colleges tend to obtain low scores.

27. Concern for the Individual Student. Students in high-scoring institutions see the faculty and the upperclassmen as going out of their way to help students. The environment tends to be rated as warm, friendly, and as high in morale. Students spend a relatively large amount of time participating in musical, dramatic, and artistic activities, and they tend to be cooperative rather than competitive in their interpersonal relations. Instructors in high-scoring institutions are more likely to know their students by name than instructors in low-scoring colleges. Students in low-scoring colleges frequently report that they feel like "numbers in a book," that they felt lost when they first came to the institution, that the faculty is more interested in research than teaching, that athletes are given special privileges, and that the campus is too big. They also feel that they have not had enough personal direction in their studies and course selection and that their personal contact with faculty members has been insufficient. Liberal arts colleges tend to obtain high scores on this dimension whereas the scores for universities are almost all very low.

28. School Spirit. Environments in the high-scoring institutions tend to be seen as high in morale and school spirit and as fostering poise and maturity in the students. Students at such institutions also report that they are relatively well satisfied with their overall experience during their freshman year. Low-scoring institutions have student bodies that are rated as apathetic and not well rounded. Students at such institutions are also inclined to feel that there is little to do except go to class and study. Institutions located in large cities and, in particular, commuter colleges tend to obtain low scores on this dimension.

29. Permissiveness. High-scoring institutions are rated by their students as liberal. The students feel that they are allowed a good deal of independence and that the faculty is liberal in interpreting regulations. Classes are described as being very informal, and the intellectual atmosphere is rated as more theoretical than practical. Students at these highly permissive institutions are seen by their fellows as tending to be avant-garde and to be relatively unconcerned with their personal appearance. They also drink relatively frequently. Students in low-scoring institutions engage frequently in religious activities and rate themselves as religious. They are inclined to feel that the college paper and humor magazine are censored, that the campus is pervaded by a narrow political point of view, and that the environment is Victorian.

30. Snobbishness. High-scoring institutions tend to be rated both as snobbish and as sophisticated by their students. The students are also inclined to feel that the intellectual atmosphere is more theoretical than practical and that there is a large group of avant-garde students on the campus. Students at high-scoring institutions tend to come from the upper socioeconomic levels and frequently attend foreign movies. The environments of low-scoring institutions are likely to be rated as practical-minded and realistic.

31. Emphasis on Athletics. Students at high-scoring institutions feel that athletics are overemphasized and that athletes are given special privileges. They also spend a high proportion of their time watching sports events. Students at low-scoring institutions are likely to be highly able academically and to feel that they do not get enough exercise.

32. Flexibility of Curriculum. Low-scoring institutions are seen by their students as requiring too much work in courses, as not offering enough in the way of outlets for creative activity, and as allowing too little freedom in course selection and too little time for extracurricular activities.

33. Emphasis on Social Life. High-scoring institutions are rated by their students as social and carefree and as overemphasizing the students' social life. Students are likely to feel it is important to belong to the right club or group, that fraternity and sorority life is overemphasized, that there is a great deal of conformity among the students, and that the amount of intellectual activity on the campus is too low. Most universities and the teachers colleges obtain relatively high scores on this dimension. Sutdents in low-scoring institutions are likely to complain that they do not have enough dates, enough time for social life or social activities, and that there is not much to do except go to class and study. Nearly all technological institutions obtained low scores on this dimension.

APPENDIX C

Variables Used in the Regression Analysis

Personal Variables

1. High School Grades (1 = D, 8 = A or A+)
2. Concern with Finances (1 = none, 2 = some, 3 = major)
3. Mother's Education (1 = grammar school or less, 6 = post graduate)
4. Father's Education (1 = grammar school or less, 2 = some high school)
5. Parental Income ($4,000 - $5,999)
6. Number of Siblings (1 - 9)
7. Birth Order (1 - 5)
8. Age (1 = 16 or younger, 7 = 21 or older)
9. Chances Will Marry while in College (1 = no chance, 4 = very good chance)
10. Degree Aspirations (1 = none, 5 = Ph.D.)
11. Type of High School (2 = public, 1 = all others)
12. Type of High School (2 = private denomination, 1 = all others)
13. I Felt "Lost" When I First Came to this Campus (2 = yes)
14. I Had Vocational Counseling in College (5 = five hours or more, 1 = none)
15. Aptitude (SAT Scores converted, i.e., 500 = 32, 1550 - 160)

Secondary School Achievement [2 = yes, 1 = no]

16. Elected President of Student Organization
17. High Rating in State Music Contest
18. State/Regional Speech Contest
19. Major Part in a Play
20. Awarded a Varsity Letter (sports)
21. Award in Art Competition
22. Edited School Paper
23. Had Poems, Stories, Published
24. Participated in a National Science Foundation Summer Program
25. Won in a State/Regional Science Contest
26. Scholastic Honor Society
27. National Merit Certificate

Secondary School Activities [2 = yes, 1 = no]

28. Gambled with Cards or Dice
29. Played a Musical Instrument
30. Studied in the Library
31. Wrote an Article
32. Wrote a Poem
33. Attended a Recital

Life Goals [2 = essential or very important]

34. Be an Authority in my Field
35. Obtain Recognition from Peers
36. Be Well-Off Financially
37. Help Others in Difficulty
38. Contribute to Scientific Theory
39. Write Original Works
40. Succeed in My Own Business

Self Ratings [2 = above average]

41. Academic Ability

Self Ratings [2 = above average], cont'd

42. Drive to Achieve
43. Leadership Ability
44. Mathematical Ability
45. Intellectual Self-confidence
46. Social Self-confidence
47. Understanding of Others

Race [2 = yes, 1 = no]

48. White
49. Black
50. Oriental

Religion [2 = yes, 1 - no]

51. Protestant
52. Catholic
53. Jewish

Career Aspirations [2 = artist, 1 = all others]

54. Artist
55. Businessman
56. College Professor
57. Secondary Education
58. Elementary Education
59. Engineer
60. Farmer
61. Doctor
62. Lawyer
63. Health Professional
64. Nurse
65. Scientific Researcher

Probable Major Field [2 = agriculture, 1 = all others]

66. Agriculture
67. Biological Sciences
68. Business
69. Education
70. Engineering
71. English
72. Health Professions (non-M.D.)
73. History, Political Science
74. Humanities
75. Fine Arts
76. Mathematics
77. Physical Sciences
78. Pre-professional
79. Psychology, Sociology, Anthropology

Environmental Variables

1. Selectivity of the Institution [based on average aptitude of students attending the institution]

2. Control (2 = private, 1 - public)
3. University (2 = yes)
4. Four-year College (2 = yes)
5. Two-year College (2 = yes)
6. Institution Located in Northeast (2 = yes)
7. Institution Located in Midwest (2 = yes)
8. Institution Located in Southeast (2 = yes)
9. Institution Located in West (2 = yes)
10. Size (1 = 200 students or less, 8 = 20,000 students or more)

ICA Dimensions

11. Competitiveness vs. Cooperativeness
12. Organized Dating
13. Independence
14. Cohesiveness
15. Informal Dating
16. Femininity
17. Drinking vs. Religiousness
18. Musical and Artistic Activity
19. Leisure Time
20. Career Indecision
21. Regularity of Sleeping Habits
22. Use of the Library
23. Conflict with Regulations
24. Student Employment
25. Use of Automobiles
26. Involvement in the Class
27. Verbal Aggressiveness
28. Extraversion of the Instructor
29. Familiarity with the Instructor
30. Organization in the Classroom
31. Severity of Grading
32. Administrative Policy Against Drinking
33. Administrative Policy Against Aggression
34. Administrative Policy Against Heterosexual Behavior
35. Administrative Policy Against Cheating
36. Academic Competitiveness
37. Concern for the Individual Student
38. School Spirit
39. Permissiveness
40. Snobbishness
41. Emphasis on Athletics
42. Flexibility of the Curriculum
43. Emphasis on Social Life

Criterion Variables

1. Dropout Status (2 = return to college for second year)
2. Freshman Grade-Point-Average
3. Degree Plans (2 = BA or better)

Career Choice

4. Engineering

Career Choice, cont'd

5. Business
6. Medicine and Dentistry
7. Secondary Education

Self-ratings

8. Drive to Achieve
9. Leadership Ability
10. Social Self-confidence
11. Understanding of Others